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THE HYGIENE OF THE NOSE[1]

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The function of the nose is that of the practical hygienist. It warms and moistens and purifies the air we breathe. One gets some idea of the extent of its function in purifying the air by observing the condition of the nostrils after a railroad journey; and investigation shows an enormous number of bacteria intercepted by the mucous membrane of the outer portion of the nostrils. Nasal breathing is an important factor also in the nutrition of the brain.

The sense of smell has, from a hygienic point of view, an important function. It is the health inspector among the senses, because it warns us when we go into an unwholesome environment; and, if we have not too much degenerated, it tests for us the wholesomeness of our food and the purity of the air we breathe. Any defect in the nose that interferes with these functions is a serious menace to the health of the individual.

Certain obvious matters in the hygiene of the nose are important. Care should be taken to prevent young children from putting things into their noses; and nose-bleeding, injuries and the like should be attended to. Dr. Bresgen, the great German authority (2, p. 246), points out that when children are learning to walk they frequently fall upon their faces, causing injuries to the septum of the nose. And again during school life, blows on the nose and falling from trees, walls, or gymnastic apparatus, often cause deviations of the septum. All such in-

[1] The author is indebted to Dr. A. C. Getchell for important suggestions in the preparation of this paper.

juries are usually neglected, and a narrowing of the nasal passages results, thus lessening the amount of air taken in by nasal breathing.

Occlusion of the nose, of course, largely arrests its functions, causes defects of speech, is liable to cause defects of hearing, and interferes with the nutrition of the brain. The most common causes of occlusion are swelling of the mucous membrane of the nose and naso-pharynx due to colds, deviations of the septum, and the like, and enlargement of the naso-pharyngeal tonsil.

The swelling of the mucous membrane due to a cold is more serious than is usually supposed. With closed or considerably narrowed passages carelessness in speech occurs. The child learning to speak has to contend with enormous difficulties anyway; when the parts involved in speech are in a morbid condition these difficulties become almost insurmountable.

The effect of a cold or catarrh upon the hearing is well known. Dr. Bresgen (2) has pointed out that children often hear quite well part of the time, and then when they do not hear are regarded as inattentive. The most common cause of this is the swelling of the mucous membrane of the nose and naso-pharynx. Since this swelling decreases in dry weather, but on the other hand increases in over-heated rooms, the hearing alternates accordingly. Again, the ability to think and the power of prolonged attention change with this swelling of the mucous membrane. Such children hear best in the first hour, while later they gradually lose their ability until, finally, they stare vacantly into space.

That nasal breathing is an important condition of brain activity has been shown by the experiments of Kafemann (13). Using Kraepelin's method he tested the ability of his subjects to do mental work in adding with normal breathing and with the nostrils artificially closed. The result was decreased ability to work when nasal breathing was inhibited.

Headache in the school Bresgen (2) finds frequently connected with nasal trouble, and he maintains that, when pupils suffer from this the condition of the ears and nose should always be investigated.

Adenoids

The nose, like every other gateway into the body, offers opportunity for infection; but elaborate means of defence is provided. The first barrier against disease germs is the hair at the opening of the nostrils; the second is the mucous membrane, which intercepts perhaps most of the invading bacteria; and a special outpost for defence is provided perhaps by the naso-pharyngeal tonsil, a bulwark where enormous numbers of

leucocytes in the lymphatic tissue are on guard against pathogenic invaders. Sometimes this becomes too large and occludes the nostrils on the one hand and the Eustachian tubes on the other. Such hypertrophy of the naso-pharyngeal tonsil is usually called an adenoid growth.

Dr. Wm. Meyer (6a and 16), a Danish physician, was the first to distinguish this defect, in 1868, and to use the term adenoid. This was a somewhat epoch-making discovery; for this disorder is found in all parts of the civilized world, and it seems rather strange that it was not discovered before. No specific cause of the disorder has been determined, but many contributing causes have been assigned. To quote Dr. Grayson: (7, p. 231)

"A list of the more prominent includes heredity, age, sex, the strumous and lymphatic diatheses, frequent colds, obstructive nasal affections, the exanthemata, micro-organisms, climatic and social conditions, the latter at times involving insanitary surroundings. Granting, however, that one or several of these are distinctly active as etiological factors in the majority of cases, yet the closest analysis will fail to discover that any one of them is essential to the development of this disease; in other words, we are entirely unable to draw from the wealth of clinical material at our command anything more than general deductions. There is nothing definite or precise in our information concerning the ultimate causes of the pathological process. As a fundamental fact, we know that in early life the epithelial and lymphoid tissue elements are particularly prone to be affected by the catarrhal and hyperplastic processes. Any condition, be it external or internal, that encourages a persistent catarrhal hyperæmia of the upper air passages in the infant or child, such as frequent coryzas or repeated inflammations of the faucial and pharyngeal mucous membrane, or continuous exposure to unfavorable hygienic surroundings, will favor the occurrence of adenoid growths. The greater functional activity of the general lymphatic system and the normally disproportionate development during childhood of the various lymphoid structures throughout the body make them the more liable to pathological alterations as the result of such maleficent influences as those just named."

Adenoids usually develop in the early years and are apparently connected with the greater activity of the lymph in case of the young. In some way, as indicated by experiments on animals, the lymph apparatus in the young and adolescent is more active than in the adult. "This is why," says Dr. Jacobi,[1] "the condition of the lymph glands in the young is of

[1] Prevention of Tuberculosis in School Children, Teachers' College Record, March, 1908, pp. 16, 17.

such importance. Whenever there is any infection of the mucous membrane the infecting poison is carried off to the next gland where there is a stopping place. That gland will become the seat of irritation or swelling. That is why . . . whenever there is only a slight diarrhœa, no matter from what cause . . . the lymph bodies in the neighborhood will swell. Unless such a diarrhœa is soon stopped, the irritation will continue, congestion, inflammation, swelling of the glands will ensue, and the structure of these neighboring glands will be changed."

This increased activity of the lymph in children in connection perhaps with the frequency of colds and infectious diseases accounts for the fact that this hypertrophy usually occurs before the age of six.

The symptoms are very obvious. In a typical case the child keeps the mouth open, has a dull, sleepy, inquiring look,—in extreme cases looks like an idiot; he speaks through the nose, and the sound is dead. He sleeps with mouth open, snores loudly, starts up and gasps for breath, sometimes has convulsions. Nutrition is often seriously impaired; growth is not normal; the chest is apt to be flat.

Dr. Crockett (5, p. 1029) has given an account of the symptoms more in detail, as follows:

"The facial expression of the child is almost diagnostic, and in large growths, the speech is perfectly characteristic; the upper lip is short, and shows two to four front teeth in the upper jaw; the upper jaw is narrow; the nose is narrow, and the face full under the eyes. On looking into the mouth the hard palate is markedly arched, especially in older children where the growth has not been removed, and where the palate has been allowed to become deformed with the growth of the child; the line of the teeth is often irregular and there is occasionally a more or less perfect double row of teeth. The child is a persistent mouth-breather, and is apt to snore, or breathe hard, in sleeping."

Special symptoms to be observed according to Dr. Guye (16) are the following:

First: Disturbances of breathing. Breathing through the nose is difficult, so the mouth is kept open.

Second: Disturbances of speech. The voice has a nasal sound, since the stopping of the nose hinders clear speech.

Third: Disturbances of hearing on account of the swelling of the Eustachian tubes. In this way buzzing in the ears, deafness, etc., may occur.

Fourth: Disturbances in the functions of the brain resulting in inattention, so called *aprosechia nasalis*, and the like.

Investigation has shown that this is a common disorder

among children. Dr. Crockett (5) thinks that at least 5% or 6% of all school children suffer from it in this latitude.

Kafemann (12), one of the pioneers in this subject, made an extended investigation, testing over 2,000 school children, and found among the boys 7.8%, among the girls 10.6%.

According to the estimate made by Dr. Laaser (14), 10% of the school children in Germany have adenoid growths, and, consequently, among the six million German school children there are six hundred thousand suffering from this disorder. In Leipzig (18, 1902, p. 255) the investigation made by the school physicians showed out of 9,031 children, 23.2% afflicted with adenoids.

In Stockholm specialists are attached to the elementary schools to examine every child (9, p. 19). In 1905 among 3,495 children they found 13.8% with enlarged upper tonsils. In 1906 among 3,907, 12% were found.

Further it is indicated by certain studies that adenoids are still more frequent among the lower classes. Dr. Stangenberg (9, p. 19) found 16% of the children in the elementary schools in Sweden suffering from adenoids, while among the High School children the number was much smaller. "In 1901 Dr. Floderus (9, p. 19) examined some 900 Board-school children, all of seven or eight years of age. In them he found 170, or 18.78%, with an upper tonsil so enlarged that an immediate operation was found advisable; and in another 170, such an enlargement of the tonsil that an operation was desirable; in all then, 340, or some 37%." In Leipzig it was found that there were more cases among the children of the so-called district schools where the poorer classes attended. This was thought to be connected with the scrofulous tendency and the fact that the children were weaker and not as well cared for. In the Bürgerschulen, where the better class attended, there were 18.9% of the children with adenoids; while in the district schools, Bezirksschulen, 25.5% had adenoids (18, 1902, p. 255).

Adenoids seem to occur more frequently among the mentally deficient. Among 114 feeble minded, Halsted (6a) found 20.1% with adenoids. In one school in New York (6) where there was a special class for defectives, a physical examination showed that 137 had adenoids, or enlarged tonsils, or both.

Perhaps until further studies have been made it is not best to attempt to establish other correlations, but several are suggested. It seems to be a defect of civilization. No extended investigations, so far as I am aware, have been made among primitive people; but among the South American Indians apparently adenoids seldom occur. Catlin (3) reports that according to his observation North American Indians always sleep with their mouths closed.

There is some evidence of a correlation between adenoids and tuberculosis, and possibly a correlation between them and the infectious diseases of childhood may be established. It is said that the disorder is more common where sudden climatic changes are frequent, and plenty of other correlations have been suggested.

The varied and far-reaching effects of adenoids have been shown by many studies. Growth of the body and of the skull is affected. With the asymmetry of the skull Ziem finds with experiments on animals that distortions of the spine occur. Development of the teeth, palate, and vocal organs is interfered with, and functional disturbances result.

On the mental side are lack of attention and of memory, and the feeling of constant preoccupation, which makes children incapable of doing normal mental work. Such a child is likely to be tired, dull, and sleepy. There is often irritability, depression, disorderly conduct, etc. "Miss Ivens (11, p. 25) in the study of 841 children finds some evidence of a correlation between deficient mental capacity as indicated by school marks and the habit of mouth-breathing."

That adenoids interfere with the physical growth of children is indicated by the observation of different writers, and there is some experimental evidence to prove this. Kastex and Malherbe measured children before the operation for the removal of adenoids and at different intervals after the operation; in all 35 cases, at intervals of 3, 6, 9, or twelve months, were measured. The general conclusion formed by these authors is that growth in height, weight, and chest girth, for some months after the operation, is three times as great as the mean growth Quételet gives for height and weight, and which Pagliani gives for chest circumference. There are, however, great individual differences (19, 1894, p. 490.).

Adenoids are one of the chief causes of deafness, because the growth is apt to close the openings of the Eustachian tubes. The tympanum is a delicately adjusted membrane kept in equilibrium by the pressure of the air in the external ear on the one side and that from the Eustachian tube on the other. The closure of the latter disturbs this equilibrium and serious muscular and nutritional changes result followed by disease of the middle ear.

The causal relation between adenoid growths and deafness has been shown by many writers, For example, Frankenberger (19, 1897, p. 291) investigated 159 pupils of a deaf institute in Prague, and he found adenoid growths in case of 94 of these, that is, 59.5%; in 42 cases there were changes in the middle ear, suppuration or the results of it, and 88% of these cases had adenoid growths. Dr. Frankenberger believes

that in some cases where children are supposed to be born deaf, really the deafness is due to adenoid growths.

The mental condition correlated with adenoids has been distinguished as a special form of inattention. Dr. Guye (16), in 1887, gave this the name of *Aprosechia nasalis*. In his paper on this subject, published in 1898, he gives the cause of this inattention as disorder of the nose, namely, adenoid vegetations in the naso-pharynx, or swelling of the mucous membrane of the nose and of the muscular tissue beneath, or irregularities in the structure of the septum which favor the development of this swelling.

The symptoms of *aprosechia*, according to Guye, are threefold: first, it is difficult for the patient to form an idea of anything new, especially anything abstract, which one wishes to communicate to him. He is stupid. Second, the patient has great difficulty in retaining ideas, suffers from weakness of memory. Third, the patient can only with difficulty turn his thoughts upon a definite subject. This is *aprosechia* in the narrower sense.

The first case reported by Guye is a typical one. A child 7 years old was unable to breathe through the nose. Although he had been a whole year in school, he had learned nothing at all except the first three letters of the alphabet. Guye found the naso-pharynx filled with adenoid growths. These were removed, and a week later the boy knew the whole alphabet by heart.

It is obvious that in cases of *aprosechia nasalis* we have to do with a defect of attention due to a disturbance of brain function. It is not quite clear what the nature of this disturbance is. Some light has been thrown on the subject, though, by the studies of various investigators. First of all, the breathing is directly affected by an adenoid, and often it becomes impossible to breathe through the nose. As the blood pressure is regulated largely by the volume of air breathed, the functions of all physiological and mental processes are disturbed. Especially noteworthy is the blood pressure on the brain. By nose breathing a great amount of venous blood and of the products of metabolism in the brain are carried off. With mouth breathing the well known pressure in the head occurs, due largely, perhaps, to the fact that the return flow of the blood is retarded.

According to Guye (16), however, the disturbance of brain function is especially to be explained by the retarded flow of the lymph from the brain on account of which the waste products are not quickly enough carried off. "By the investigations of Schwalbe, Key, and Pretzius," he says, "it has been shown that the lymph spaces of the brain communicate

with the lymph vessels of the nose, and therefore the intercranial lymph must in part pass the mucous membrane of the nose. If, now, on account of swelling of this mucous membrane the lymph vessels are subjected to more or less pressure, of course the flow of lymph is correspondingly checked and the products of metabolism are retained in the brain, and this affects its function" (16).

It is doubtful whether the lymph has more than a subordinate function in the removal of waste products. This interference with the flow of lymph may have a serious influence, however, on the nutrition of the brain. Dr. Hough (10, p. 137) maintains that the interstitial lymph currents are of fundamental importance in maintaining the proper physical and chemical surroundings of the cell, and anything which favors them becomes an indispensable factor in the healthy working of an organ. The cause of the flow of lymph in the lymphatics are the contractions and relaxation of the circular muscles of the lymphatics, the active force of the lymph formation producing interstitial pressure, the pumping action of the muscular contractions and of changes in the position of parts of the body with regard to one another, as in alternate flexion and extension of the limbs and trunk, and the aspiration of the thorax. As the lymph is carried away, lymph is formed from the blood and the cell. Thus physical exercise is an important factor in the proper nutrition of the cells of the part exercised. And on the other hand anything that interferes with the flow of lymph from an organ is unfavorable to the nutrition of the cells. This is, perhaps, the chief reason why a sedentary occupation is bad.

Again, Guye (16) points out: "With nose breathing the aspirations of the venous blood to the heart is much greater than with the mouth breathing, since in the latter case the respiratory movements are more superficial. Since the patient is obviously forced by such obstructions in part at least to breathe through the mouth, the aspiration of the venous blood from the head is deficient, and since likewise it has been shown that the intra-cerebral lymph is also carried off by the Arachnoidal tissue to the venous sinus, it is clear that on account of the nasal trouble the flow of lymph by this channel also is retarded." That is, the flow of lymph from the brain is checked in two ways by the adenoid: 1st, by the swelling of the mucous membrane of the nose causing pressure; 2d, by deficient aspiration of the venous blood from the head.

Guye (16) found among 152 patients with adenoid growths, 62 with decided *aprosechia*, 32 with slight *aprosechia*, and 58 with none at all. Perhaps there is a correlation between the amount of hypertrophy and the degree of *aprosechia*. But of

course in any individual the other conditions of brain nutrition may be so favorable that *aprosechia* does not result.

Mouth breathing is not always associated with adenoids. Sometimes it is a mere habit which might be broken by suitable training, and this habit of mouth breathing may persist after adenoids have been successfully removed by an operation; but whatever the cause it is injurious. Catlin, although he exaggerates the effects of this habit, is quite right in emphasizing its injurious character. He draws a striking contrast between the tightly closed lips of a crowd of North American Indians and the open mouths of a civilized crowd. The burden of his book is an account of the disastrous effects of the habit of mouth breathing among civilized people, and, in spite of his humorous enthusiasm, the closing sentences of his book contain an important truth:

"The Proverb, as old and unchangeable as their hills, amongst the North American Indians: 'My son, if you would be wise, open first your Eyes, your Ears next, and, last of all, your Mouth, that your words may be words of wisdom, and give no advantage to thine adversary,' might be adopted with good effect in Civilized life; and he who would strictly adhere to it, would be sure to reap its benefits in his waking hours; and would soon find the habit running into his hours of rest, into which he would calmly enter; dismissing the nervous anxieties of the day, as he firmly closed his teeth and his lips, only to be opened after his eyes and his ears, in the morning; and the rest of such sleep would bear him *daily* and *hourly* proof of its value.

"And if I were to endeavor to bequeathe to posterity the most important Motto which human language can convey, it should be in *three words:*—

"Shut—your—mouth.

"In the social transactions of life, this might have its beneficial results, as the most friendly, cautionary advice, or be received as the grossest of insults; but where I would paint and engrave it, in every *Nursery*, and on every *Bed-post* in the Universe, its meaning could not be mistaken; and if obeyed, its importance would soon be realized" (3).

The result of an operation is usually very successful. It is rare that serious results follow. Certainly in 99% of adenoid growths, says Dr. Crockett (5), the result of an operation will convert the most skeptical parent. The growth is apt to occur in early life, and it is desirable that it should be removed before the child is ten years of age. The ideal age to get the best results from an operation Dr. Crockett puts between 3 and 5 or 6, as the child's throat, nose, mouth and teeth are thus assured perfect development.

Some writers think that the improvement from an operation for adenoids is chiefly confined to an improvement of speech and hearing. Guye, Dr. Schmid-Monnard, and others (19, 1901, p. 331), however, have noted decided mental improvement;

and it is apparently a matter of common observation that such improvement frequently occurs.

The beneficial results of the removal of adenoids have been notably illustrated in New York City. Dr. Cronin (6) reports that in case of 81 children written consent was obtained from the parents to perform the operation. They were operated upon by three specialists at Mt. Sinai Hospital, June 21, 1906. Six months later 76 of these were re-examined, and without exception they had all been promoted and were all doing well in the advanced grades.

The varied improvements observed are summed up by Dr. Sprague as follows:

"The effect of the operation on the general health is, in nearly every case, very pronounced and in some cases truly marvellous. Nature seems delighted to be rid of this offending material. It seems as though a heavy weight had been removed from the child's body, as though a life that had been in bondage had been set free. The pale, sickly, poorly-nourished children begin to grow in all directions, their bodies show better nourishment, the once flabby flesh becomes firmer, the skin shows a better color, the stupid, vacant facial expression gradually disappears and a more normal physiognomy is established; and in the deformed faces of mouth breathers, if the condition has not existed too long, there is a decided change for the better as soon as nasal breathing is established. In the children under twelve, where the ears have been involved, there is usually a restoration of the hearing function. In some cases, however, after-treatment of the ears is necessary. In the suppurating ears, if there is no diseased bone, the otorrhea ceases in a short time. The whole scene, in fact, is changed; the nervous, irritable, peevish disposition soon fades away and the child seems like a new being. The night scene is a decidedly changed one, the restless tossing about in bed, the snoring and struggling for air, is replaced by peaceful, quiet sleep. All things considered, there is no surgical or medical transaction which will call forth more expressions of gratitude and praise for the physician than this operation when successfully performed" (18, p. 192).

The importance to the teacher of knowing the essential facts in regard to adenoids is obvious. A child suffering from this disorder is liable to be treated unjustly and unwisely on account of his inattention, irritability, or disorderly conduct. Parents are likely to be ignorant of the indications of the trouble. And even when they are not, it is a strange fact that in case of their own children they seem to be often blind to the obvious symptoms.

Dr. Hagelin has shown the importance to the teacher of

modern languages of knowing something about adenoids. At the London Congress of School Hygiene he presented a paper in which he enumerated the various mistakes and defects in articulation likely to occur in such cases. He writes in part as follows:

"As to sounds in general, mistakes or wrong articulations are not limited to the ordinary substitutions of, *e. g.*, 'voiceless' for 'voiced'; of open types of the same vowel instead of close, undiphthonized forms for diphthonized, and *vice versa*. Sufferers from adenoids have those mistakes in common with all learners. One thing, however, is remarkable in them — the difficulty they have in learning tolerably correct articulations, and of keeping them in memory if once acquired. A pupil may have learned and mastered an articulation pretty well; presently he seems never to have heard of it.

"But, also, the most surprising and incomprehensible errors occur. Adenoidal patients even substitute back vowels for front vowels sometimes: fit, fat, foot, are substituted one for another by a pupil of mine in his worst moments. He is about eighteen years of age, and was operated upon quite lately. He still needs correction until these slips of the tongue are remedied. But those blunders are not of the same kind as in other pupils. They recur too regularly, and are to be regarded as symptoms of an incomplete speech and relapses into some insufficient kind of innervation. In suffering from adenoids, the whole vowel system is sometimes very lax.

"Vowel substitutions in such pupils cannot possibly be grouped together according to fixed rules. They sometimes seem, at least in the advanced degrees of the disease, to take place in quite a desultory way.

"Consonantal substitutions are a little more tangible. Lack of innervation is the common characteristic of them all — articulations of the point and blade of the tongue towards the gums, the d, t, n, s, sounds are performed too weakly.

"The weakness of the dentals is very conspicuous in combinations of two sounds in the group nd, nt, rl, lr, one of the two being used to represent both: Stanning for standing, elegan for elegant, eldery for elderly" (9, p. 41).

If the best results are desired, it is certainly only common sense to examine a vocal instrument before beginning to use it. Dr. Hagelin's recommendations are not unreasonable. He concludes that in view of the fact that defective hearing is caused by adenoids, compulsory examination of all school children should be made by specialists, and before beginning the study of a foreign language there should be a further examination of nose and throat in connection with hearing tests. On the request of the teacher every pupil should be obliged to consult a specialist to have his hearing tested and his nose and naso-pharyngeal region examined. Such a co-operation between the school and the physician is a *sine qua non* for success in the learning of foreign languages. We may add that such examination is necessary also in all language instruction.

Dr. Laaser (14) also, strongly urges the need of investigation of this trouble in the schools. This can be done without

taking a great amount of time, as shown by Dr. Holemann, who tested 354 pupils in two days between the hours of 7 and 12 A. M. The external signs, however, are insufficient for statistics. Examination by the finger is abhorrent to the child. It should, at least, in no case be permitted without the consent of the parents. The use of the rhinoscope is not always sufficient. Health inspection should, nevertheless, include a special investigation for adenoids, not necessarily an expert examination, but at least a report from observation of the usual symptoms.

In Leipzig the school physicians note the cases of adenoid growths by observing the usual symptoms. They do not, however, make digital examination of the naso-pharynx, because it would not be easy to sterilize the hands while making their general investigations, and they recognize that such examination is disagreeable to the children.

In Holland such investigation has been undertaken at the recommendation of Professor Guye by the teachers. Burger reports on the examination of a large number of these children with the rhinoscope. 15 to 20% of the children could not be examined in this way. Of 13,283 that were examined 30.2% (4,014) were found to have adenoids.[1]

If teachers make the preliminary observations a blank like the following can be used:

ADENOIDS.[2]

(N. B. Cross out the words not used in answering.)

Name of school.....
Name of principal.....
Name of class or grade.....
Name of teacher.....
Name of pupil.....
Sex.....
Date of birth.....

1. Does the pupil sit with open mouth?..... { Always / sometimes / no
2. Does the pupil complain of headache?..... { always / sometimes / no

[1] Annals of Otology, 15, 1906, p. 389. The review of this is not very clear as to whether these were representative or not.

[2] This questionnaire is adapted from one recommended by Dr. Guye. See Z. f. Schulges: Vol. 17, 1904, pp. 90.

3. Is the pupil inattentive?..... { very / somewhat / no }
4. Is the pupil backward in learning?..... { very / somewhat / no }
5. Does the pupil's voice have a nasal sound?... { always / sometimes / no }
6 Does the pupil stutter?..... { always / sometimes / no }
7. Is the pupil hard of hearing?..... { always / sometimes / no }
7. Does the pupil complain of earache?..... { often / sometimes / no }
9. Remarks.....

The main results of the numerous investigations of adenoids made during the last forty years may be summed up briefly as follows: First, the general cause of adenoids is an excessive activity of the lymphoid tissue of the pharynx; but the specific cause is not known.

Second, this hypertrophy of the naso-pharyngeal tonsil is a disorder of childhood, it usually appears before the age of six or eight and is very likely to subside or be arrested in the latter years of adolescence with approaching maturity. Apparently this disorder is connected with the greater activity of the lymph in childhood as compared with that of adult life.

The practical points for school hygiene may be summed up very briefly: First, these investigations have shown that a very large number of children suffer from this disease. Dr. Crockett's (5) estimate that 5 or 6% of children in this latitude have adenoid growths is probably a conservative one. The investigations in Leipzig, London, Stockholm, New York, and other large cities, indicate that the number, at least among the poorer classes, is likely to be much larger than this.

Second, this disorder not only interferes with physical growth and causes or aggravates many functional disturbances, but it interferes with speech and hearing and the mental ability of the pupil.

Third, in most cases where the effects of the adenoid are serious an operation proves successful. The best time for an operation is the kindergarten age, between 3 and 6.

Fourth, it is important that teachers should learn to distin-

guish this disorder, as parents are less likely to observe it; seeing their children every day the latter fail to recognize the most obvious symptoms.

Fifth, wherever the services of a school physician can be obtained, tests should be made for adenoids; and reports of observation should be made by teachers.

Sixth, nasal breathing is one of the conditions of efficient brain activity; this is shown not only by the effect of adenoids, retarding the mental development and intellectual activity, but also by experiments in artificially occluding the nostrils.

Seventh, no child should be sent to a school for the feeble-minded without a test made by a competent specialist to determine whether the mental defect is not caused by an adenoid growth.

Upon a conservative estimate the reare in the kindergarten and elementary grades in this country from 100,000 to 200,000 children suffering from adenoids. Immediate detection and treatment by a competent expert are likely to mean the prevention of much discomfort, increased efficiency in school work, and the opportunity for normal development. Neglect is likely to mean a handicap in school work, lack of brain nutrition, imperfect development, speech defects, constant danger from colds, and ultimate deafness. Here is a case where no devices of formal education can atone for hygienic neglect.

Bibliography.

1. Bresgen, Maximilian. Ueber die Bedeutung behinderter Nasenatmung, vorzüglich bei Schulkindern. Hamburg, 1890. pp. 34.
2. ——. ——. Die hauptsächlichen kindlichen Erkrankungen der Nasenhöhlen, der Rachenhöhle und der Ohren, sowie ihre Bedeutung für Schule und Gesundheit. Internationalen Kongress für Schulhygiene. Nürnberg, 1904. III, pp. 241. 254.

2a. —— ——. Die Nasenkrankungen in ihren Beziehungen zur Schule. Gesundheitswarte der Schule, IV, 1906, pp. 9-19.

3. Catlin, George. The Breath of Life, or mal-Respiration and its effect upon the enjoyments and life of man. John Wiley & Son, New York, 1872. pp. 76.
4. Chappell, W. Franklin. Examination of the Throat and Nose of Two Thousand Children to Determine the Frequency of Certain Abnormal Conditions. The American Journal of the Medical Sciences, Vol. XCVII, 1889, pp. 148-154.
5. Crockett, E. A. Some Diseases of the Nose and Throat of Interest to Teachers. Addresses and Proceedings of the N. E. A., Boston, Mass., 1903, pp. 1028-1031.
6. Cronin, Dr. J. J. The Physical Defects of School Children. Reprinted from the Journal of The New York Institute of Stomatology and Allied Societies for Dec., 1907.

6a. Drew, Frank. Review of Original Papers on Adenoids, by Meyer, Hooper, Bresgen, Chappell, Kafemann, and Halsted. *Ped. Sem.*, March, 1893, Vol. II, No. 2, pp. 307-309.

7. GRAYSON, CHARLES PREVOST. The Diseases of the Nose, Throat, and Ear. Second Edition. Philadelphia, 1906. pp. 532.
8. GUTZMANN, HERMANN. Über Hören und Verstehen. Zeitschrift für angewandte Psychologie und Psychologische Sammelforschung. 1908, Band 1, Heft, 6, pp. 483-503.
9. HAGELIN, DR. H. Adenoids and Modern Language Teaching. Modern Language Teaching, Vol. 4, No. 1, pp. 16-19; No. 2, pp. 38-44.
10. HOUGH, THEODORE. The Physiological Significance of the Flow of Lymph and its Relations to Muscular Exercise. American Physical Education Review, Vol. V, No. 2, June, 1900, pp. 133-141.
11. IVINS, F. Cited in the report of the Education Committee of the London County Council, submitting the report of the Medical Officer (Education) for the year ending March, 1907, pp. 23-27.
12. KAFEMANN, RUDOLF. Schuluntersuchungen des Kindlichen Nasen-und Rachenraumes Danzig, 1890, pp. 29.
13. ——. Ueber die Beeinflussung geistiger Leistungen durch Behinderung der Nasenathmung. Psychologische Arbeiten, Leipzig, 1902, pp. 435-453.
14. LAASER, M. Eingige schulhygienische Betrachtungen. Z. f. Schulges. Vol. 2, 1898. pp. 365-372.
15. LANGE, VICTOR. Über den Einfluss behinderter Nasenatmung auf die körperliche und geistige Entwicklung der Kinder. Zeit. f. Schul., 1893, Nr. 6, pp. 313-321.
16. MOUTON, J. M. C. Die Aprosechia nasalis bei Schulkindern. Zeit. f. Schul., 1903, No. 1, pp. 7-10. Based on Guye, A. A. G.: Aprosechia nasalis, Geneeskundige Bladen V. Reihe, No. 12, Verlag von Erohn F. Bohn. Haarlem, 1898.
17. NEUMAYER, HANS. Hygiene der Nase des Rachens u. Kehlkopfes. Stuttgart, no date. pp. 160.
18. SPRAGUE, FRANK B. Observations in One Thousand Adenoid Operations. Annals of Otology, Vol 16, No. 1, March 1907, pp. 180-194.
19. ZEITSCHRIFT FÜR SCHULGESUNDHEITSPFLEGE. Redigiert von Professor Dr. Fr. Erismann. Hamburg. Commenced in 1888.

THE RELATION OF A NATION'S SOCIAL IDEALS TO ITS EDUCATIONAL SYSTEM[1]

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The first thing that one observes when making a comparative study of foreign school systems is the strikingly intimate relations which exist between the social organizations and the social ideals of these peoples and their several educational systems. It is interesting to trace the relation between a few striking features of the German, French and English educational systems and the social organization and ideals of these peoples, and to consider what lessons we may learn from these European systems, and what is needed to bring our own educational system into harmony with our American ideals.

Taking up Germany first we shall look at the Prussian educational system as typical. Here we find two parallel systems of schools. The first and oldest system is composed of a three year *Vorschule*, giving elementary instruction, followed by the nine year *Gymnasium*, which in turn is followed by the university course of three years, leading to the doctor's degree and preparing for the so-called learned professions. The State gives only partial support to these schools so that tuition fees are charged sufficiently high to keep out all children of the lower classes and of the poorer middle classes. In these schools the classical, the literary, and the philosophical studies are almost exclusively pursued. Parallel to this system is the six year *Volksschule*, or free school for the lower class and the poorer middle class. The course in this school is very similar to that of our common elementary schools, except that the elementary courses in such cultural studies as the ancient languages are omitted and all the time given to the more immediately practical subjects. The children of the very poor must pass out directly from the *Volksschule* into active labor or into one of the numerous separate agricultural or trade schools, where all attempt at general culture or individual development is subordinated to the giving of immediate practical efficiency in some line of labor. Thus the upper classes and the well to do in the State pass through the *Vorschule*, *Gymnasium*, and the university or institute of technology, while the lower classes pass through the *Volksschule* and trade schools.[2]

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[1] An address delivered at the opening meeting of the Department of Education in the University of Texas, 1907.

[2] In the second half of the 18th century *Realschulen* or higher *Bürgerschulen* arose, which have developed into the present pay *Real-*

So much for the barest skeleton of this system. As you see, there is no *common* school system at all, such as we have in America, in which children of all classes of society mingle freely, the well to do having a chance to learn of the virtue and strength of the poor and unrefined, and the poor and unrefined to catch something of the refinement and culture of the upper classes. The *Volksschule* is not only filled almost exclusively with children of the lower classes, but even the teachers in these schools usually come from these same lower classes. The normal schools which train the teachers for the *Volksschule* are entirely separate from the institutions which train teachers for the *Vorschule* and *Gymnasium*. Again, the work of the aristocratic *Vorschule*, *Gymnasium* and university is a composite unit, each part preparing for, and presuming upon, the addition of the next higher part clear on to the university. The free school system, on the contrary, is so organized as to encourage dropping out and to make it well nigh impossible at graduation to pass into higher schools. There is really a third system of education in Germany conducted through private tutors up till the university is reached. This system is patronized by the Kaiser, the nobility in general, and the extremely wealthy who ape the nobility.

We have, to be sure, samples of all these types of education in America, but here our one great common school system is doing 95 per cent. of all the teaching. When one begins to suggest to the well-to-do German the advantages of our great common school system he is met at once with the German ultimatum, "Ach Gott, nein! mein Kind mit dem schlechten Publikum." Rigid class distinctions are an essential part of the German social ideal. All upper classes look down on the lower classes, they know little or nothing about them and do not seem to want to know much

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schule and *Oberrealschule*, corresponding to the *Gymnasium* but giving science and modern languages instead of the classics. A hybrid *Realgymnasium* has also been created, teaching Latin and modern languages but no Greek. *Technische Hochschulen*, or institutes of technology of university grade have also been greatly developed. But all of these are as a rule pay schools. The government offers also a number of scholarships, enabling a few of the brightest poor boys in the *Volksschule* to go free into the higher schools. But, generally speaking, one may still say that the upper classes pass through the *Vorschule*, *Gymnasium*, and university or institute of technology, while the lower classes must pass through the *Volksschule* and trade school. Needless to say all such broad general statements as I shall make about these foreign schools would need many qualifying clauses to reduce them to absolute accuracy. What is said in each case is, I believe, true in general, and accurate enough to form the basis for such conclusions as are here drawn. I am not attempting to give an accurate and full account of these school systems.

about them, except how to get the most work out of them and to keep them where they are. The German professional man looks down on the German tradesman, who in turn scorns the laborer. They don't even want to come into the apartment house by the same door. There is one door for gentlemen and one for tradesfolk and laborers. There are many individual exceptions, but in the main the Germans believe that rigid class distinctions are right, and society without them would be to their minds abhorrent. With such a social ideal, this triple tracked school system and separate set of schools for each class is the only possible workable system. It is for Germans in Germany at the present time the only rational system.

Second only to the German's adherence to the class system is his present sincere infatuation for the military ideal. It is not merely that he loves to be a soldier and is prouder of his army than a small boy of his first long trousers, but this military ideal dominates the whole German life. Every branch of the government, the factories, the stores, the families even are run on the military principle—absolute and unquestioned authority above, implicit and unquestioning obedience below. The German military ideal calls for a small number of highly trained and broadly educated commanders, strong personalities, able to direct and command, and an immense horde of well trained, obedient troops, units without personality, patient and enduring, who know how to do exactly what they are told, to ask for no reasons, to think out nothing for themselves, to "stay put." The way in which this ideal is reflected in the school system is most interesting. In the lower schools, especially in the *Volksschulen*, where the great body of the citizens is trained, the organization is despotic and the method of instruction mechanical. On the other hand, in the university and in the institutes of technology, where the commanders of society are to be trained, the organization is free and democratic almost to the point of anarchy, the discipline is a practically negligible quantity, and the method of instruction such as throws a student absolutely on his own resources and leaves him to work out his own salvation or not in his own way and at his own time.

When first visiting the German elementary schools one is charmed with the perfect order, the decorous attitude of pupils toward teachers and elders, the wonderful funds of knowledge displayed by the pupils, the careful and pedagogically perfect explanations of all difficulties given by the teachers—explanations not only of the present lesson when not understood, but of the to-morrow's lesson which the pupil has not yet attempted for himself. As compared with this German teaching, the American teacher does practically no teaching at all. He

merely lets the boy teach himself and then quizzes him to find if he has done it. In fact the subject matter of each study is usually so thoroughly organized, so perfectly explained, so happily expressed by the German elementary teacher, all before the pupil has attempted the task for himself, that unless he be a genius he could hardly do better than memorize it just as the teacher gave it and repeat it thus in class the next day. So far as I observed, this they universally did. The teacher's talk and his questions to the class were so well organized that questions from the pupil seemed an interruption, disturbed the smooth development of the subject, and were usually frowned down. Slight originality in answers seemed to indicate a lack of proper respect for the authority of the teacher or the book and usually got little encouragement. After my first enthusiasm over the smooth running of things and over the perfectly organized knowledge of teacher and pupil had cooled a little, the mailed fist began to disclose itself. These boys were not studying here because they wanted to learn, but from fear, from force of habit, or because of the dread of being dropped out before the grade of *Secunda* was reached, and thereby being forced to take the extra year of army service in class with the peasants, and thus in German eyes to be eternally socially disgraced. These boys were getting quantities of book knowledge about two years ahead of that of an American boy of corresponding age, they were learning to do certain things efficiently in a certain way, but they were losing their capacity for helping themselves, losing their tendency to try to think out things for themselves, losing their initiative. In short, these elementary schools are after all merely the machine for grinding out the efficient, obedient, unquestioning units.

In the university, on the other hand, professors offer such courses as they see fit, begin when ready, and quit when they wish; the students elect about what lectures they please, attend them or not as they choose, live where they please and do just what they want to. Nothing is forced upon the student. Every opportunity is offered for self direction and the cultivation of independence of thought and action, and every encouragement is given to critical study and original research. Here are being trained the independent leaders, the domineering commanders. Bismarck, I believe it was, once said, of the German university students, "One-third drink themselves to death, one-third study themselves to death, and the other third rule Europe."

Thus we see the outward organization of the German school system is the counterpart of her social organization, while the spirit of the discipline and method of teaching reflect primarily the dominant military spirit of her people. There are many

other qualities of German character and social ideal both good and bad reflected in her school system, but these must suffice for our present purpose.

France has a similar double tracked educational system. The outward form of the French educational system is even more centralized and despotic than that of Germany. It in no wise comports with the present democratic tendencies in France. It is most irritating to the educators themselves and its presence can be explained only on historic grounds. It is simply an inheritance from the days and spirit of Napoleon and is being gradually changed. If the outward organization is an inheritance from the imperialistic days, and is being gradually changed, the inner spirit is far from it. On my first entrance into a French elementary school after six months in the strict rigid German atmosphere, I felt as if I had struck a mob. Some pupils looked out of the windows, some drew pictures, some walked, some talked to each other, some read their books, some listened to the teacher, and some talked to him or to me. As compared with the German elementary school it seemed more like an American Sunday school picnic crowd waiting for the train than like a school. These were very small pupils. Certainly there was no military spirit in this school. No, France is sick and tired of military. Her people, struggling manfully against the frightful weight of her social heredity, have set up as their motto *Liberté*, *Egalité*, *Fraternité*, and in the schools they are trying to train up boys and girls into free men and women. Their ideal is not a race of efficient, but obedient, units governed from above, but a nation of free individuals, each governed from within, hence the school must give children practice in self government, for school is a preparation for life. I confess that the results in these early elementary grades were disconcerting, and I followed the classes on up the grades with intense interest and many misgivings. Practically no punishment was allowed, and French nature is perhaps the most buoyant and effervescent on earth. However, by the time the middle grades were reached, order began to appear, and during those years which correspond to our high school the pupils were, without question, the most polite, the most universally well behaved and the most attentive and industrious I have ever seen in any country. This really remarkable discipline was apparently not due to rules, and the pupils gave no evidence of uncomfortable constraint. Here was a seeming miracle performed, a whole school full of youths brought in a few years from apparent anarchy to the point of governing themselves, and all without severe discipline and almost without punishment. They were always treated with kindness and sympathy, their individuality had been re-

spected, the teachers had tried to make the work appeal to their natural instincts and arouse their loving interest. Had I not seen this transformation time and again with my own eyes, I could hardly have believed it possible.

The next distinctive characteristic which struck me in the French schools of which I shall speak is one hard to understand unless one has had some intimate experience with a Latin race. It first appeared to me in a common school in Paris when the principal broke up several classes to have a large number of pupils come down in the auditorium and perform for us a play which they had written for themselves. These children from ten to fourteen years of age had not only written, with a little help from the teacher, the rather heroic and classic type of short play, but had planned the stage setting and concocted the helmets, breastplates, etc. They acted it out after their own ideas with an intensity and earnestness that was remarkable. The principal of the school was most responsive and pleased, and remarked to me something like this: "Ah, that takes a lot of time, but is of more worth than the learning of whole pages of some literature book. What we want is to make these boys sensitive to the things around them, to the beauties of literature, the beauties of plot, of expression, of thought; and this attempt to do something themselves and this appreciation of the beauties of their own work will make them more sympathetic and more sensitive to the beauties of the great masters." The Frenchman in his heart seems to yearn not so much for mountains of laboriously heaped up knowledge, not even for such excessive efficiency in action, but for sensitiveness and responsiveness, responsiveness to all the beauty of human relations, of literature, of art, of science, of nature. What the German rationally calculates out, what the Anglo-Saxon by common sense and constant blundering happens on finally, the Frenchman catches by some brilliant intuition through his open and sensitive nature. This is his joy, his ideal. It is this sensitiveness which her educational leaders seem to be trying to develop. What though the production of this schoolboy play took the time in which a hundred pages of French literature might be learned? It was more than compensated for in the eyes of this principal if, in the composition or in the interpretation of one noble passage, the boy got a real feeling of the beauty of some noble sentiment or of some perfect literary form. Perhaps here would be inspired some youthful Racine, some Hugo. How common this spirit is in French schools I do not know, but certainly it is there to some extent, and, so far as my observation has gone, far more so than in any other land. Only a Frenchman or Italian could feel the full force of such an ideal.

Leaving France with these rough strokes, let us take a brief look at England. The English, holding as ideal an aristocratic form of government, maintain naturally also an aristocratic form of school organization. The poorer classes are given their limited education in free elementary schools, designed to meet what are supposed to be their limited needs; that is, such education as will make them efficient clerks, carpenters, cooks and servants for the upper classes, and will not inspire them with too many disturbing ambitions for higher spheres of activity. The aristocracy, both of blood and of wealth, have their own separate system of great so called "public schools" and universities, such as Eton, Harrow, Rugby, Oxford and Cambridge. This is not the whole truth. The English aristocracy is not a closed one. The door to the nobility is always open to genius and, likewise, in their school system numerous scholarships have been established through which the brightest of the poor boys from the free schools are given admission into the aristocratic public schools and universities to obtain training for leadership. The ideal system of society to the English mind is a class system in which the upper classes know and exercise their superiority, and the lower classes recognize and accept their inferiority. This national ideal is so strong that one finds not merely the double tracked educational system of Germany and France, but even among the aristocratic schools this division of society into the obedient and the obeyed finds its expression in the system of upper class student discipline and of "fagging," which, boys and professors both claim, teaches the young ones "to know their places," and the older ones to command. For example, at Rugby upper class boys are lodged on the upper stories of the quadrangle and the lower class boys on the first floor. Any upper class man may at will stick his head out of his window and yell "fag," whereupon every lower grade boy in the building must rush out into the quadrangle to see what is wanted. The last one to get out must run up and do the chore for the upper class boy. He may be ordered to go and get wood and build a fire, to run down town and buy tobacco, to go over to another building and borrow a tennis racket, or to do some other such menial errand. If the little boy should refuse, which he almost never does, he might be caned by the upper class boy without any interference even from the teachers. They themselves were caned when lower form boys and in turn, when they became upper class men, caned and fagged the lower boys, and believe that it is good for a young one "to learn his place," as they say. In each of the several houses in which the pupils are lodged in these public schools, the discipline is usually maintained immediately by an upper class man, who is denominated house

captain. He enforces his authority even to the point of caning a lower form boy. At aristocratic Eton, for example, the house captain takes his cane with him to football matches and public gatherings in order publicly to punish and hold down any possible desire on the part of the lower form boys to indulge in practices which are proper in his eyes only to older form students. This responsible position of house captain is acquired you would think because of scholarship, or character, or leadership. Oh no! Just as the son who is born first is given the titles, powers, and wealth, no matter how stupid he may be, so the boy who entered eight years ago on the first of October is given the position over the boy who entered on the second of October, regardless of qualifications.

Another thing which strikes the American in England is the extreme uniformity in their ideal of an English gentleman. To this one distinct type of hardy, athletic, energetic, aggressive, persistent, indomitable cultured gentleman they all wish all of their sons to conform. And so we find that practically all their great public schools and universities are conducted on one plan. They have till recently had only one course of study, one round of games, and one set of social activities. To further assure this uniformity of type, the children are removed early from the influence of necessarily varied home life and sent to live in these public schools under a common discipline, common curriculum and common social life from about nine years of age till manhood. This breaks into the home life and produces an uniformity of type that to our mind is most monotonous.

Another striking English trait which dominates their social life and reflects itself in their school system is conservatism. Your typical Englishman is a conservative beyond all compare. Tallow candles are still found in a goodly per cent. of English homes. Even last year the faculty at Eton were still angry that invisible steam radiators had been introduced into the long, cold, stone dining hall to help out the two open fireplaces in the sight of which the boys with blue lips, and quivering spines had eaten for centuries. This distrust of all that is new, this clinging to the old, this hatred of change which is such a marked characteristic of the great body of Englishmen, finds its expression throughout the whole school system. Oxford has been the last great national university of the western world to yield any place at all in her curriculum to modern science, modern languages, and modern literature. Greek and Latin literature have been taught at Oxford for five hundred years but the professorship of English literature there is only about fifty years old. Even yet the course of study and the methods of instruction in Oxford are quite similar to those of the seventeenth century. The favorite course of study of one of the

most modern of the English public schools devotes during the six upper grades seventy-six hours to Greek and Latin, but only six hours to English and ten and a half to history. It is the Englishman's intense conservatism and his love for a common uniform type which have for so long forced upon the colleges and universities their mediæval curriculum and their single set course of study. Seeing this, one might be puzzled to understand how the Englishman's love of freedom and self assertiveness find expression in the schools. This is done primarily through the enormous rôle left to athletics, to sports and games and to social life among the students.

Coming now from these scattered glimpses of foreign social ideals and foreign educational practices, what can we bring home to America? The greatest and best lesson one learns is that he can bring home not one single practice or institution in its entirety.[1] One learns that any single foreign institution is but a member of a vast, closely related and mutually dependent set of institutions, the reasons for the establishment of which can be understood only through a knowledge of the history and the ideals of this people. The success of an institution is, to be sure, dependent in part on its internal character, but also in large measure upon its fitting into the established social system and meeting the ideals of the people. Simple as this seems many of our distinguished educational leaders have not yet grasped it, and consequently we are constantly trying to graft on to our American educational system German and English institutions. The latest illustration of this is found in the movement for introducing a set of separate high schools for the study of agriculture. Wisconsin and Minnesota started this by copying the successful German agricultural high schools. The United States Department of Agriculture, through the Davis bill, is now seeking to establish with national funds a large number of such schools in the several States, and some leaders of public opinion in Texas are also recommending that Texas set up in each congressional district one special high school solely to teach agriculture and educate farmers. Germany with her inherited rigid class distinctions and her limited suffrage naturally educates her farmers in her agricultural schools, her artisan and trades folk in her *Volksschulen* and

[1] In order to avoid giving possible comfort to the narrow view held by some educational jingoes, perhaps it would be well to call attention to the fact that the above statement in no wise means that America has nothing to learn from a study of these great foreign school systems. We have already learned much and can learn much more, if we but study them aright. My purpose is to suggest the way in which such study should be made, to point out the danger in merely copying programmes and methods, and show the limitations set by nature to the transplanting of practices and institutions.

trade schools, and her professional classes in her *Gymnasien*, while young princes are taught by private tutors. No better plan could be devised to keep the various classes in the community ignorant of one another, to narrow each one's life down to the limited interests of his set, and to preserve thus the hereditary class distinctions so dear to the average German. But why adopt this plan in America? At present we have no rigid class distinctions. If we have become persuaded that this is a mistake and wish to establish them, then by all means establish these separate systems of schools for the different classes of occupations and bring each class up ignorant of and out of touch and sympathy with the others. But if we are to preserve our universal suffrage, by which every one has equal vote in determining measures relating to any and all classes, is it not absolutely essential that each class have an intelligent appreciation of the services and needs of all other classes? It has been the pride of our American schools that the children of Frenchmen, Germans, Americans, of carpenters, cooks, merchants, doctors, poets, politicians, all were turned into our common school together and came out more or less prepared for their different occupations, but with common American ideals, with a common democratic spirit of tolerance and appreciation. In order to be efficient, we are obliged to narrow the class work and restrict the studies of a boy preparing to be a farmer largely to subjects which bear upon this work. This is narrowing enough without putting him off in a school in which all the pupils and all the teachers are studying exactly the same subject. By this, not only would the farmer lad lose the stimulation and broadening knowledge of life and society which he would gain by being taught in the same school with the children from other classes of society and with varied interests, but the children from these other classes would lose on their part the stimulus offered by the presence of the farmer boys. Each will be narrowed and weakened, and society will tend to fall apart from sheer lack of any common interests, common knowledge or mutual appreciation. The establishment of separate classes ignorant of and hostile to each other will be an accomplished fact. That there is grave danger in this movement towards separating the different classes of society into different schools no man who will stop and think can deny. There has long been in certain sections of our country a similar undemocratic movement toward setting off all manual and domestic education in separate schools, but Texas has been wise enough to introduce this work into her regular schools. She has thereby established within three years twenty-two schools in which manual training and domestic economy are taught at about one-tenth of what would have been the expense of an

equal number of separate schools for this work. And under our democratic school system the children pursuing these industrial courses are kept during their school years under the broadening influence of a school of general culture and are receiving from their teachers and companions training for intelligent citizenship and decent living as well as industrial efficiency. While extreme specialization may be necessary for the highest efficiency in advanced institutions patronized by mature students, let us in democratic America, which places individual worth above industrial or military efficiency, brook no narrowing specialization of our educational institutions during those years of childhood and youth when our schools should be striving first of all to make men and women—free, self-respecting, self-governing citizens. Let all of our children grow up together in a common school and the varieties of needs and capacities be met by a system of limited election of studies even in the preparatory schools.

This study of foreign schools and social ideals teaches us in the second place that not only is every institution merely a part of a great social whole and cannot be transplanted, but that even a great principle of education, of government or of religion cannot be transplanted bodily from one people to another, for it must inevitably be interpreted by each nation in accordance with its racial characteristics. For example, all the great nations of western Europe subscribe to the same religious principles, but their interpretations and their practices in school and in church are as varied as are their several racial ideals. Rome voted out heathen idolatry and adopted Christianity fifteen centuries ago. The temples of Venus and Apollo and Castor and Pollux have crumbled, and were buried for centuries under forty feet of dust and city garbage, but the Romans still fill their churches with images of their dead saints, before which figures myriads of candles daily burn and thousands of devout pray for intercession. They no longer are inspired by seeing Castor and Pollux mounted on white chargers leading the fight against Rome's enemies, but when plague comes, when Vesuvius spreads destruction, when the last reserve sweeps into the fight to stay the crumbling battle line, the priest holds aloft the invincible monstrance, or some reliquary containing the heart of a St. Francis or other such sacred physical relic. You may lay down your spiritual Christian principles, but these artistic, poetic Italians, with their vivid, childlike imagination and craving for pictorial representation, demand with it some physical form. The American Catholic may be satisfied to conceive of St. Peter as the spiritual ruler of a spiritual church, but your Italian Catholic will have in addition a bronze image of St. Peter, dress this in a pope's

mitre, and in all the silks, rubies and diamonds of pontifical splendor, and solemnly bow and pray before this physical representation of his spiritual father. The images of Castor and Pollux and Jupiter have been cast out, but in their stead have arisen St. Michael, St. Mark, St. Peter and the hundreds of saints whose images fill the churches and before which the pious fervently pray for aid in their undertakings and troubles. The recognition of this fact of fundamental racial differences and consequent social and religious conceptions and practices is most painful to one who has been accustomed to think that the solution of all educational and social problems will be found when we think out the one true and best ideal of education and the one best system for carrying out this ideal. Such facts force us to see that there is no one best social system nor one best school system for all nations and all people. This seems again a very simple proposition, but it is one that the leaders of our nation have never learned. They have practically exterminated the Indian, made a fool of the Negro, and made an enemy of the Porto Rican and Philippine Islander by well meant but unscientific attempts to force on them suddenly the best education and the best social system from our Anglo-Saxon point of view.

This study of foreign ideals and educational systems shows us then that, whatever we may hold as the ultimate aim of education, the educational organization, the method and immediate aim must grow out of the social ideals and social needs of a people. The work of the educator is not merely to sit in his study and determine *a priori* what is best for mankind in general, but he must live among his people, be of his people, and learn of their ideals and needs. The highest ideals of the noblest of his race must the educator recognize, and through his school organization, his methods and his course of study carry them out through the young into the lives of the masses. This, too, may seem a very simple task, but in reality it is very far from it. To catch the true and not the false ideal of your people is to be able to lead your race from the bad that is in it to the good that it really in its heart loves. When the educator mistakes for a permanent love of his race some passing craze or temporary passion of the people, born of some untoward circumstance, then the school becomes an engine of destruction, the mightiest known to man. The progress of the human race was set back centuries when the leaders of education in the early Christian era interpreted as a permanent need of the race and carried into the schools as universal practice the then present asceticism and otherworldliness which apparently arose out of the unfortunate grafting of Neo-Platonic philosophy upon the religious views of the inhumanly perse-

cuted Christian sect. Likewise, in our own day we have yet to see whether the German race is not to fall prey to the intense militarism and rabid patriotism which were carried into their schools to meet the immediate necessities arising out of her defeat by Napoleon, and are kept there to make possible the aggressive world policies of a brilliant and ambitious emperor. In America, out of the physical dangers of pioneer life and the pressing need of conquering the wilderness and subduing nature to man's uses, and later out of the tempting opportunities afforded by boundless natural resources, came an abnormal interest in the pursuit of the mechanical and physical and in the heaping up of material wealth. Our educational leaders have for some time been responding to this temporary need as if it were the one permanent and pre-eminent demand of our nature. Through ill judged means chosen to this end, our schools, often unconsciously, yet none the less effectively, have for a generation been carrying to the masses as the primary aim of life the mastery of physical forces and the accumulation of material resources, without sufficiently instilling rational views concerning the proper distribution or the worthy use of this wealth. It is no wonder that having sown the wind we are now reaping the whirlwind of brutality and corruption in pursuit of wealth which daily shock all thoughtful people. It is true that the school is not by any means the only factor responsible for this result. It is also true that all this time the schools have been furnishing morning talks and reading books filled with praise of the spiritual beauties of life and of noble ideals of self-sacrifice. But what does this amount to when the whole bent of the school work is toward the acquirement of that knowledge and that skill useful in heaping up material wealth or in acquiring mere personal power.

There are many other grave questions suggested by this cursory glance at foreign social life and school systems, but time does not suffice to mention them.

Let us close by considering a few elements of our own social ideal in their bearing upon our educational system. What is the American social ideal? This is hard to answer fully, for our ideal is very complex and is not yet wholly crystallized. A few elements of a national ideal seem, however, plain.

First of all, our social ideal is democratic. The real American does want every man to have a fair chance to show what is in him, and not to be prejudged because of humble birth.[1]

[1] This is true only of white races. While the American does not prejudge because of humble birth, it seems that the vast majority, North, South, East, and West do prejudge the yellow and black races, and are unwilling to share this land and its opportunities with them on absolutely equal terms.

In order to realize this ideal three things are demanded of our schools: First, that they be free from top to bottom, for pay schools at any stage would exclude the poor; second, that these schools be common schools, that the different classes of society be not educated in separate schools, for to herd all the children of the poor in one set of schools, where they never see or mingle with the cultured and refined, is not to give either the poor or the rich a fair chance to develop; third, the curriculum of our public common schools must be enlarged till it offers training for every kind of worthy human talent, and preparation for every honest occupation. To give the boy with literary talent unlimited courses of study and turn the boy with musical or manual talent away empty handed, to give the doctor a four-year course and turn the artist or farmer out to graze is not a "square deal." The American system has accomplished much, but much yet remains to be done, to bring our schools in this regard fully into line with our national democratic ideal.

Second, our American ideal demands that each man shall have his own individuality, and develop in his own way—not that all shall conform to one type, however excellent that type may be. This spirit demands of our schools and colleges the elective system, for few people have the strength to plough through a tough uniform required curriculum and then develop their special talents afterward. This ideal demands not only that there be election of studies, and not one universal common curriculum, but that the opportunity for making this election be kept open as long as possible. For this reason again separate parallel sets of schools leading to different classes of occupations, such as we find in Germany, have no place here, for with such radically different curricula in the early grades of these two sets of schools, it is well-nigh impossible for a boy to change from one to the other after he is once started.

In the third place, our American ideal demands that a man first of all be a man, a full human being, a full citizen with all the rights and responsibilities of a full man and citizen. For this reason our public school system can never encourage specialized elementary schools, celibate societies for teachers, militarism, or any form of extreme specialization which breaks the God-given balance of powers in man, and for the sake of securing some one-sided end put a man out of touch with the loves and hates, desires and needs of his fellow man, thus leaving him too ignorant of life in general to vote intelligently on common questions of life. The capacity for touching the common life of the race undoubtedly lies at the root of the solidarity and strength of the Anglo-Saxon race. In spite of class distinctions in England, this has been kept alive by sports and

games and by the common trials of war. In America it is developed in our common schools, into which children of all classes go and in which they live together on perfect equality in their classes, in their sports, and in such social life as the schools are now affording. As the growth of cities and the specialization of industries increase and keep people from touching one another in their common labors, this common social life of the school must be increased apace and extended till the schools become the social as well as the intellectual centres of the community. Here our educational leaders have yet before them a task which they have hardly begun to realize.

In like manner we can say that our American ideal is not that of a society composed of a few brilliant commanders and a great mass of obedient units. Our ideal is a society composed of free citizens, each independent in thought and action, possessing initiative and resource in novel situations, governed by laws imposed from within—or at least approved from within. If our citizens are to think for themselves, are to have initiative and self control, then in our schools the children must begin to think for themselves, to learn to direct their own efforts and govern themselves. The military discipline and the perfect mechanism of the German *Volksschule* have no place in America, nor has the fagging system of England. Our schools must allow boys and girls to share the responsibility in choosing their own courses, must encourage them to work out their own methods of solving their difficulties in their studies, in their sports and in their social life. Freedom in forming and expressing their own opinions on the part of pupils, freedom in working by a method different from that of the teacher and the book, courage and confidence in tackling difficulties alone, these are what our real American teachers must aim at from the lowest grade clear through the university. This is already appreciated by our teachers to a degree that makes foreigners shudder in dismay, but in my opinion much remains to be done. In the matter of discipline, for example, our universities have in the main come to a rational honor system of self-discipline, but our public schools are only beginning to get out of the old monarchial state and have yet much to learn, especially in regard to high school discipline.

These few considerations will show how vastly different are our educational problems from those of the European States, and how very dangerous it would be for an educator to glean superficially from foreign school systems. Our American educational system, like our American social system, has made many strides upward. Both still have many weak points and have much yet to be added, but these additions must come by healthy growth from within and not by grafting on our vigor-

ous young tree the alien shoots from the stems of European civilization. The American educational system has its own unique problems and must be developed in accordance with our social ideals and the genius of our people. With a new composite race, new social ideals and institutions, in a new land, we have the most magnificent opportunity ever offered the human race to create new educational ideals and develop a new educational system in the clear light of scientific truth and human reason, untrammeled by inherited institutions and inherited theological or economic prejudices. This work will demand men and women with the fullest knowledge of history, of biology, of anthropology, of physiology, of sociology, of psychology, with the habit of observation of the scientist, the broadened sympathies of the literary scholar, the reflective power of the philosopher and the faith of the prophet. I can think of no task involving more delicate sensitiveness of nature and broader views of life. It offers a call to the pioneering spirit of the soul, to the strong of mind, the stout of heart, the indomitable of will. In this great work that is before our nation and before the human race, it is my sincere hope that this new department of education here may lead, and that from our seminary, our laboratories, our experiment school, and from our alumni may go out a constantly increasing fund of discovered fact and carefully thought out principles which will furnish the basis for the development of an ever saner and broader educational system.

RELATION OF THE CHURCH TO EDUCATION[1]

By G. Stanley Hall

Christianity has a record in the history of education as unique as it is magnificent. Jesus himself was a great teacher, brought a new doctrine and gave a new theory and rule of life. He invented the parable, which made nature and social life eloquent of spiritual truth and which was a pedagogic device more portable and more persistent than the ideal of Plato's myths. His disciples were commissioned to preach and teach; Paul was a great master of polemic and hortatory exposition; Origen called the Holy Spirit the divine pedagogue because it led into all truth, and Tertullian called its "still small voice the new muse of truth." When in 529 A. D. Justinian's famous edict closed the four great schools of classic philosophy, the church took possession of the world of culture and slowly evolved a new system of thought and life; Rome became the great patron of learning, wrought out a new philosophy and established universities at Bologna, Salerno, Paris, Oxford, Montpellier, Prague, Cambridge, Vienna, Heidelberg, Florence and about fifty others, many now dead, all before the year 1400. Long before this Charlemagne and Alcuin had established cloistral, cathedral and other schools where reading and writing and the seven liberal arts were taught to all comers, and Latinity had given Europe one international language, that of culture and of the church. For centuries the liberty of teaching and learning was almost complete, and we Protestants are prone to do scant justice to the educational foundations laid by the Catholic church in its great formative period. When she began to grow suspicious of the learning she had so sedulously fostered and the Renaissance and the Reformation arose, we find Luther, Erasmus, Calvin and Melanchthon establishing schools and reconstructing courses of study and nearly two score new universities were founded under the influence of the Reformation in Europe. It was again profoundly felt not only that schools of high and low grade were the hope and the method of Christian propaganda, but that ignorance and superstition were the parents of sin and that enlightenment was the surest way to bring men to true religion. Thus it came about

[1] Address at National Council of Congregational Churches, Cleveland, Ohio, October 11, 1907.

that almost down to our own times the clergy have been the teachers, leaders, inspirers of most of the best things that have been done in education. This was true of the Catholic church, of Lutherans, Puritans, Anglicans and the rest. Many a high school and college in this country owed its origin to religion. Belief in education has always been one of the first articles in the unwritten creed of Christendom. Even when the influence of the clergy began to decline in the higher academic grades of culture, they were long its chief representatives to the masses and established and directed elementary schools.

Now, however, in all Christian lands among Catholics and Protestants alike, this educational supremacy is either lost or in various stages of decline. There has been a growing aversion to clerical influence in education and complete secularization and laicization of the schools is to-day the ideal goal in many high places. It is high time for the church to awake to this situation to realize all that it involves; to know the extent of its pedagogic decadence; seek to fathom its causes, to trace out its consequences and to do its utmost to find the cure. We are still doing much, and let us thank heaven and take all possible courage from the large remnant of educational efficiency still left us. We still have the Sunday School, though its work needs much reconstruction to be brought abreast of the methods of secular training. We have the splendid work of the Y. M. C. A., but it reaches but a very small fraction of the young men of the land who need it; our theological courses are improving, but how slowly, when compared with other lines of professional training in law and medicine, technology and pedagogy. The church in all its branches collectively has a score of charitable and reformatory agencies and institutions that are doing the Master's work among the poor in slum and remote districts; the influence of the pulpit is potent against evil in high places and in low, against corporate greed, oppression, industrial malpractice, social evil and political corruption. Many denominations have established colleges in this country, but as a class they are relatively declining before the rapid advance of unsectarian and State institutions. In all these great causes, the church not only prays, but works; it not only follows, but sometimes leads; it not only preaches, but acts; but our efficiency is still far below the great traditions of the church in the past. What we are doing, we know and are perhaps a little too conscious of it, so I bespeak your sympathy in my rather unwelcome task this evening of trying to point out first some of the difficulties and adverse influences in the present situation.

1. The separation of church and State, while a great, is not an unmixed good, for it has involved abolition of religious

training for our entire public school system. Boys and girls are most susceptible to religious influence during the teens, when practically all confirmations and most conversions occur, and at this age more than at any other religion is the bulwark of morality and nothing can fill its place. It has been said that were religion all false, we should have to invent and apply it if we had the wit to do so, for its influence upon the emotional nature, which is now at its flood-tide, and for the restraints which it puts upon the lower propensities which now burst into sudden strength while the intellect and conscience is yet too undeveloped and uninformed to control them. A number of careful consensuses state that very many of our children pass through not only the required but even secondary stages of schooling without knowledge enough of Scripture even to understand the commonest allusions to it in literature. Despite the brief morning reading from Sacred Writ sometimes practiced, many American children leave school when legal requirements of attendance are satisfied and others graduate from secondary schools and even colleges, who have never felt even the literary power of the great passages of the Old and the New Testament and with no coherent knowledge whatever of the Bible as a whole. I will not take time to report here on the as yet somewhat discrepant conclusions of statistics of these recent studies, but all agree that the proportion of children thus densely ignorant is very great, and that for a decade or two it has been steadily increasing. Our Catholic brethren complain that the schools are Godless. We Protestants who gave the Bible to the laity have yet more and more to complain of Bibleless schools.

2. Meanwhile what is the State doing in its secularized public schools? Out of 365, during 214 days of the year there is no school in the United States, the average length of the term time being only 151 days. Thus, about five-eighths of the time the American child could not attend school, if he wished to, but is exposed to all the evils of idleness, and who can name a single evil which pedagogues are so fond of charging up against truancy that should not equally be charged against vacations which the truant simply prolongs? Thus, during considerably more than half the week days of the year, the school, and usually the grounds, are closed to the children.

How about attendance when school does keep? Of the 23,500,000 children between five and eighteen years of age, 16,500,000 enroll, and some 7,000,000 who should, do not do so. Those who enroll actually attend 105 days out of the 151 on which school keeps and are absent on the average about one-third of the time. Thus, we can say roughly that less than half the children who should be in school are actually there

during less than half the week days when school is in session. All these statistics are from the last report available, viz., for the year 1904-05. Boies estimates that 8,000,000 American children under fifteen are constantly schoolless, that there are at least 1,400,000 illiterate voters, and, of course, a vastly larger number of illiterates of both sexes above ten years of age, which is the usual basis.

The average pay of public school teachers in this country is $55 per month for males and $42 for females, the latter constituting 76 per cent. of all. Far less than half of our nearly half million teachers have ever had any professional training, and between one-third and one-fourth of them leave the profession every year. This poorly paid and untrained army of raw recruits is our chief hope against illiteracy and all the evils that it entails. They must Americanize the children of the million immigrants that now are landing on our shores each year. Yet our faith in the permanence of democratic institutions, of civic purity, business integrity, and personal virtue has come to rest more and more upon these schools and teachers. Do and can they thus constituted justify this faith?

Again, almost the entire control of our schools to-day is in the hands of local boards who determine the amount of money to be raised and expended for education, provide schoolhouses, text-books, employ teachers, fix their pay and the length of the term, etc. Under this system the more ignorant a community is and the more in need of good schools, the less likely are the boards that represent them to see this need and the less the chance that they will be able and willing to meet it. While superior and devoted men can sometimes achieve excellent results, the system itself is bad, and low politics, sordid views, false economies and vacillations are too common, while favoritism and graft are not unknown. Men but little above the average intelligence and virtue of the community and whose chief desire is to please their constituents and win popularity enough to climb higher up the political ladder, of which the school board is the lowest rung, are about as unfit custodians of the vital interests, which in a Republic centre in education, as could be found.

Again, has the school moralized a country where divorce has steadily increased for twenty years in every State save one that keeps such statistics, so that there are now a trifle more divorces in this country in one year than in all the other Christian lands combined, *i. e.*, amounting to about one-tenth of all who marry? We have 2,921 courts with power to grant divorces as against England's 1, Germany's 28, France's 79. This country leads in homicides, which for the last dozen years amounts to from 8,000 to 10,000 per annum, a higher rate than

in any Christianized and civilized land, enough being slain yearly here to populate a small city. About two per cent. of the slayers are caught and punished as against over ninety per cent. in Germany. The percentage of juvenile crime which is rising in general is increasing faster here. Despite all agencies, old and new, there has been a remarkable increase of hoodlumism in American cities within five years, and the proportion of convictions to population by age is greatest here during the middle and later teens. There are many causes of this feralization of Youth besides the long vacation during which many houses and estates are closed and tempting. A new one is that while we have been raising the minimum age of child labor we have not succeeded in keeping the child in school during these years when he is barred from so many occupations by these new child-labor laws, so that after satisfying the requirements of the law of school attendance boys who will not continue their education are now unable to find employment. Yellow journalism with its daily chronicle of crime, the increase of urban life that forces so many lower propensities into precocious development before the powers of control are matured, the fact that our schools appeal essentially to the intellect and strive principally to inform and smarten it, the fact that 90 per cent. of all the school boys in the United States satisfy the requirements of the law without ever having been under the influence of a male teacher, and that women are not the best trainers for boys in their teens on the duties of citizenship and political life, voting, and that budding manhood demands more masculine treatment—these are some of the difficulties with which we have to contend.

Secular education is popularly supposed to abate superstition. Does it do so? A recent writer collected over 7,000 confessions of superstitions concerning such matters as salt, fire, moon, owls, cats, mirrors, horse-chestnuts, days of the week and year, birthdays, numbers, warts, right and left hand, charms, precious stones, money, dreams, sneezing, weddings and nearly one hundred other such topics. These confessions were all by American students of *academic grade* who were preparing *to become teachers*, and one-half of all were more or less believed in and nearly all had been believed in earlier in life. They are relics of very low savage culture and related chiefly to death, disease, money, love, etc., and show that our education, science and civilization have done but little to weaken the old pagan faith in luck, signs, etc. Not only miners, sailors, gamblers, lovers, but masses of our fellow citizens are credulous in different degrees not only about many such things, but toward palmists and fortune telling by cards, stars or diviners by scores of omens, hoodooes and mascots, while rank

morasses of occultism, crasser forms of spiritism dominate most of the lives of some, if not some of the lives of most. It has even been asked whether education by bringing children together has not done nearly as much to diffuse as to check these superstitions. However this may be, it is clear that those who linger in this outgrown stage of thought and to whom the world is a chaos and not a cosmos are not truly educated.

Again, surely good citizenship requires common honesty, business integrity, fair play and truth telling. Are we progressing here? What about the appalling revelations made within the last three years in so many places concerning the adulterations of drugs and patent and other medicines, foods and drinks, about our growing money madness, and what is becoming of business integrity under the methods of competing cheapness of productions, trusts and combinations that control the prices and output and even of the interests of life, about secret rebates and the suppression of the natural laws of competition? How many will say anything that goes and do anything that shows, and have at heart really adopted the maxims of Sterner and Nietzsche and scruple at nothing that succeeds and regard nothing with remorse except being found out and whose supreme goal in life is to get rich, make display, give themselves all the pleasure their bodies can bear? What about the wful staatistics of drink and the growing laxity in the sexual relations in both high and low classes, or our race suicide as seen in the steadily decreasing birthrate and the steadily increasing infant mortality under five and especially under one, which is greater in our cities than those of any other land? Are we awake or sleeping and dreaming concerning these general tendencies and ineluctable facts or are we living in a fool's paradise, and is our national optimism like that of Dr. Pangloss who cheerily praised God and insisted that his was the best possible life at every progressive stage of defect, and human leadership? Can a nation lean toward barbarism amidst electric lights, automobiles, telephones, splendid homes, schoolhouses, churches that are teeming with wealth, swarming with promoters, with get-rich-quick schemes as well as with noble philanthropists and reformers who are bravely stemming the tide? Is it not high time for yet larger and more constructive and concerted effort for confession on the part of church and school that much as has been done, the best endeavors and achievements of the past and present must not only be again equalled, but exceeded and grow pale before still greater accomplishments? We delude ourselves that all these evils can be overcome by habits of neatness, by punctuality, order, the moral influence of music and history, by emphasizing and teaching respect for authority, self-government,

good character and example of teachers. Yet these are the *only* cures I find in the latest discussions of the pedagogy of the present.

Let us, then, finally glance at a few of the schemes of betterment that have been lately and seriously proposed. One thoughtful writer [1] suggests further centralization of educational effort in a national bureau at Washington with three long-tenured and highly paid commissioners who shall not only collect and distribute information like the present Bureau, but shall prescribe a general plan of instruction for the whole country and advise both national and State legislation and that both together shall distinctly reduce local autonomy. Especially the States must assume control of all schools, assess, collect and distribute the school tax, prescribe the length of term, salaries and textbooks, the qualifications of teachers, compel attendance of all children up to sixteen. This, it is urged, would slowly remedy many evils.

Another urges that every educational agency must now be co-ordinate and that not only public but private schools and the training of all delinquents and degenerates and juvenile courts should be correlated so that all children of school age, whether in or out of school, should be taken account of. Hitherto these agencies have been directed by very different methods and with very diverse degrees of intelligence. Normal courses should fit teachers and caretakers in all these lines. Under such a system, each child could be placed in whatever position he would get the most good; and wasteful misfits, both of pupils and of teachers, would be avoided. The child is now a legal personage and belongs to the State as well as to the home, and the former should assume co-guardianship.

It is now nearly twenty years since the public schools of France were secularized and all religious teaching forbidden in them. Fearing an increase of juvenile immorality when religion was expelled and in view of this ominous void thus created in a curriculum to which they had been so accustomed, the French, at once, created courses of a new kind for moral and civil instruction for every grade. They ransacked their own history and literature for stories illustrating exceptional and even dramatic acts of virtue and selected many moral and apt quotations to impress social duties and promote virtue. Fearing that conscience was not sufficiently infallible or strong, patriotism and the noble pagan sentiment of honor were appealed to also, the latter with great effect. There are many prizes, medals, public testimonials, special columns in the press

[1] H. M. Boies: The Science of Penology. Putnam's, New York, 1901. pp. 559. See especially chapter 18—The Education of Children.

to commemorate all children who have done noble acts. Love and pride of country and the instincts of the true gentleman and lady are thus made into a kind of secular religion. All this is well and thus courses have already justified themselves, but they are not enough. Youth always has and always will need religion to tide it safely over the adolescent crisis of life, for it can be made to supply a yet far stronger incentive to virtue than the ideal of good citizenship or of honor, potent as these are.

The German method recognizes not only the æsthetic and the moral, but the intrinsic value of religious training, and has enforced religious instruction in the public schools for more than a generation on the following plan. About every child or its parents must elect near the beginning of the school course either Catholic, Lutheran or Jewish religious training. Each of these three churches nominate the teachers of its own faith who must, however, pass a stringent examination by the State which pays them as to their qualifications, and these teach in the school buildings, examine and look after the moral and religious needs of their pupils one or two half days per week, inculcating Scripture, church history, creeds, forms of worship and giving spiritual guidance enough to fit for confirmation. Thus, rabbi, priest, or clergyman has access to nearly all the school children, so that it is impossible for them to grow up in such dense ignorance of Scripture and religious matters as is increasingly prevalent here.

This scheme could easily be made practicable here for Jews and Catholics, but the dissident Protestant sects, despite several efforts, have not, so far, been able to agree as to the method or matter of instruction, so that in this respect the difficulties here are very similar to those encountered where mission boards representing different denominations have tried but failed to unify their work in heathen lands to avoid the stigma despite the injury that this insistence upon denominational differences is causing in both fields. Could all or the chief Protestant churches agree upon a course of religious training for public schools, the German scheme would be as workable here as it is there under an established church.

Failing this, we must abandon, finally, all thought of bringing public education again under religious influences, however generic, and take up the prodigious task which the French have faced of devising a national scheme of training in morals without the aid of religion on some ethical culture basis. The most sagacious school men, however, are now realizing, as never before, that education of the heart and life in right conduct must be made the chief goal of pedagogic endeavor. On this basis there is one line of effort now opening which seems

a promising foundation on which the churches of all creeds and the secular schools can heartily co-operate, and that is what a recent writer calls "the re-awakening of the physical conscience."[1] The last quarter of a century has witnessed a remarkable revival of interest in physical culture, college athletics, clubs in high and grammar schools, leagues like that of New York city with President Roosevelt at its head, hundreds of Sunday School athletic organizations, gymnasia, the Pope's hearty sanction (he having lately witnessed the contests of all the athletic societies of Italy in the Vatican gardens, become their patron and conferred 250 gold and silver medals) congresses of school hygiene, playgrounds (covering 75 acres in Chicago, 110 in Philadelphia, 200 in Boston, a single one in New York to cost $2,500,000);—all these represent a new and immense movement extending over the entire civilized world, even to China and for women, where the movement has already brought forth imperial decrees forbidding the use of opium and foot-binding. In Japan as in Germany, under the influence of the Turner societies, the stature of the soldiers has actually increased from this cause, but what is more important is its effects upon the soul. Athleticism, plays and games rightly directed give a new sense of loyalty and heartiness, a healthy tone of emotional life, more patience, courage, fraternity and perhaps above all brings into operation a new love of personal purity of body and soul. This great tide of human culture already shows signs of the approach of a general "physical renaissance such as the world has only seen twice or perhaps thrice, and which preceded by about a generation the most brilliant periods in the intellectual history of makind." Health means wholeness and holiness and is the best natural basis of the new practical Christianity. It means more enthusiasm of humanity, and this wisely directed unlocks ideals and wins the heart to the good, the beautiful and the true and does vastly more than our old modes of secular training ever dreamed of to give a clean soul in a clean body, and what better goal has religion than to make the body the temple of the living God?

Finally, the churches, while maintaining as long as they will their denominational differences of creed and forms of worship on Sunday, should now unite to formulate a programme of week-day education in the broadest sense of that now rapidly expanding word. Leaving the doctrines of the trinity, incarnation, revelation, miracles, salvation in another world and all other dogmas, however precious to believers, to be chiefly Lord's day matters, let the church waive all these distinctive doctrines during the week and seek ways and means

[1] See Dr. R. C. Newton: Popular Science Monthly, August, 1907.

of concerted effort to resume some of its ancient function of the care and guidance of the souls of youth in practical morals and in personal enthusiasm for pure and true living on this earth. Open its doors to every possible *good* week-day use. By its long deterioration from insisting upon dogmas and its diminished interest in science, humanism, nationalism in the past, it forfeited to the State its natural function, and now the partial failure of the State to perform this supreme task of moralizing the rising generation affords the church a new and vast opportunity of resuming its lost functions. Putting aside all claims of ecclesiastical authority and every theological shibboleth, can we not join hands, animated by a simple but fervent love of man and by the crying moral needs of the present and the young, and set the world again an example of supreme service in a crisis of dire need? To do this we must abandon once and forever the old uncompromising spirit that demands all or nothing, and realizing that absolute truth and virtue are rarely attainable on this earth, understand that the second and even the twentieth best is vastly better than nothing and well worth doing. If the State will not have Scripture, the world's greatest inspiration of righteousness and its chief text-book in psychology, let us study the Bremen method of introducing carefully selected ethical extracts made up by religious men of the best proverbs and most inspiring classics and all Bibles of other religions. If we are not yet ready to attempt the methods of the German Simultan-schulen by which Catholics and Protestants seek to combine their pedagogic efforts in a few fundamentals, at least, let a few of the Protestant sects unite their efforts in the mission field and cease to maintain expensive sectarian organizations there and then let them try to denominationalize each of their colleges and seek, by so doing, to confirm, broaden and deepen their common Christian character. The State will never again tolerate any creed or confession in the school. Its religion is patriotism and the school is now its nursery as it was that of the church. Science will never assent to the dogmatic method, but Christianity should not be expurgated from the art, religion, history and humanities which it has done so much all these centuries to create and without which even they cannot be rightly understood and without some knowledge or feeling for which our children are like deaf mutes studying music. Better virtue without Christianity than Christianity without virtue, if such an antithesis were even conceivable. Let us, then, recognize the god of things as they are and accept the inevitable with joy and, according to the old stoic maxim, try to rise to the opportunity of leading this great impending movement for moral

education, more pressing and promising than anything in the history of schools for the last half century, and ourselves work out a programme, Godless and Bibleless though it must be in name, utilizing to the uttermost the sentiments of patriotism, honor, mutual help and social service, realizing that Christianity itself is not all ecclesiastical or theological, but that a purely secular week-day religion can and must now be wrought out, and that the detailed methods for doing so are now within sight and reach.

PEDAGOGY—ITS TRUE VALUE IN EDUCATION[1]

By G. Stanley Hall

The educational value of pedagogy which you have assigned me as a topic is a splendid and timely theme. I fear that college pedagogy has not wholly commended itself to high school principals and that perhaps no class of educators are on the whole quite so skeptical of its merits, or more initially averse to the claims which I wish to make for it, than are you. But believe me, it all depends upon the kind of pedagogy and how it is conceived and taught. There is a brand of it for which I share all your aversion and contempt (if that be not too strong a word), and that is the sort which I fear your position makes you see most of. But there is also a pedagogy which I hope to convince you is worthy of your highest respect. The difference between the good and the bad is immense, greater, I sometimes fancy, than exists in any other branch of education. The worst pedagogy, as *I* think, is that represented by a new class of college and university teachers who have been let loose within the past few years upon the high schools, public and private, in the East, but far more in the West, who in one pocket carry lists and testimonials of their graduates who seek positions as high school teachers and whom they wish to place, in the hot competition now existing between college teachers' bureaus, so as to have men holding their own diploma in high school positions. These men are also recruiting officers after your graduates to enlist them as freshmen, as well as being also travelling teachers' bureaus. They can often confer the right of admission by certificate and seek your patronage as feeders. They often address the school on the attractions and advantages of college life, and in some Western States visit parents and the boys themselves in vacation and occasionally are authorized to themselves grant exemptions from college fees to those whom they enlist. Sometimes they can even examine individually for admission. One of these professorlings of pedagogy in the far West told me last summer that within the year he had visited every high school in his State, which was a large one, and had a list of every boy likely to enter college in the next two years; that he had visited doubtful candidates in their homes and had the dogs set on

[1]Address at Meeting of Head Masters' Association, New York City, Dec. 27, 1907.

him when his business was known and had been told, in at least one case, that similar representatives of three other rival institutions had called on the same errand within a week till the parents were minded not to let their son go to college at all, as it would seem to be selling him to the highest bidder. This was, let us hope, a very extreme and exceptional case in the far West. But you know what would now become of a college president, East or West, who, where bigness and numbers loom so large, failed to show an increase of attendance for several years, so that the situation is sometimes desperate. Nothing but large endowments can counteract it. Little is said about this work at the institutions which authorize it. When not in the field as colporters, these men spend enough of the year teaching education in the institutions they represent to secure for themselves professional standing there, but they are chosen chiefly for their ability as drummers, and for their power to persuade and make proselytes to the college faith. The growing magnitude of this work is indicated by the fact that last spring, vacancies for twenty-four such positions came unsought to my own personal knowledge. And so sudden and great is the demand that it is very hard to find the right man. There are those doing this work who might and who would *prefer* to do far better things, and as it is, some are really helpful in their work within academic walls in preparing intending teachers, but this function is too often brief, fragmentary and secondary.

2. Another smaller class of academic professors of pedagogy stay at home and devote their chief attention to secondary education, since it is here that the interests of their institution chiefly lie. They lecture about German gymnasia, Real-schulen, French Lycée, and English public schools, collect statistics of high schools, their growth and administration, the proportion and number of pupils taking each subject, etc. Their courses are open not only to students intending to enter upon the work of teaching, but are also often given after hours and on Saturdays that those actually in the harness may attend. These professors usually also characterize briefly the great philosophers of education from Plato down to Herbart and Spencer, and a very few of them have a word to say about the pedagogy of the different high school branches, but they usually accept the *status quo*. Some of them have lately a little something to say concerning the nature and needs of high school boys and girls or attempt to characterize the all important years of adolescence, the critical questions of which age focus in the high school. This class of professors, as I know them, are generally honest, industrious, faithful, and some of them are able, but their field, as they define or as it is prescribed, is narrow and

the soil of material is scanty, thin and poor. Their work is more or less superficial and they lack the courage or ability to do the deep subsoil plowing so cryingly needed here. Did they attempt it ever so ably, it would probably at first tend to divert and not to attract students, and alienate rather than win the good will of you masters and teachers. They are rarely in a position to advocate an educational policy at variance in any particular with that of the institution they serve, or with the present ideals and practices of the high school. They often protest that they have all the academic freedom they want, but either they are mistaken or love their fetters, or else lack the initiative to use the larger freedom needed here. The professor of economics, *e. g.*, is *free*, only not to criticise millionaire philanthropists who might endow. The professors of religion are free, only they must not raise any odium theologicum against the college, and so the professor of pedagogy is free; but he must not meddle with the policy of his institution which the president represents and he must stand in the closest rapport with all feeders. These professors, even the best of them, are still often thought somewhat inferior by their colleagues, for their academic standing is not yet fully established. Thus the types of college pedagogist you probably know most about work under limitations, whether felt or not. Fortunate indeed is he if his inner limitations leave him ignorant of the very existence of his claims. Every pedagogy professor who specializes on the high school can do something for you that is very valuable and well worth your time; but not very much, certainly never enough to be the basis for a doctor's degree. Two or three dozen well packed lectures at the most would give each novice about all that is worth while here. Some of you are already well on the way toward ample qualifications to fill such chairs yourselves, and in fact some of the best of such positions have been recruited from your ranks. You would probably all be safe in such chairs, for you have learned to do well under limitations. Of course some of these professors also undertake more or less of the functions of my first class of college drummers, for there is no hard and fast line of demarcation between the two classes. I think the consensus of faculty opinion is that this kind of work is more professional than cultural. Some normal schools, too, attempt to train high school teachers, but this is usually an affectation, for they rarely attract the ablest men, and where this is seriously attempted there is usually much confusion and waste. High school hygiene is another recent and fruitful topic here, and co-education might be, but is rarely discussed.

Before describing pedagogy as I conceive it, I must speak of another and by far the largest class of teachers of pedagogy,

namely, those in either college or normal schools that chiefly train teachers for grammar grades and superintendents and supervisors. Here, too, there are all kinds of merit and demerit. The most vicious of all types perhaps now in vogue is a kind of definition philosophy or psychology that fills the mind with empty words and phrases and with the conceit of knowledge; all form and no content. This still persists in some older normal schools, but is moribund and may be left here to the quiet extinction that awaits it, and which can come none too soon. Then come a few essential elements concerning school law, organization, relation of the teacher to the State and the parent, elements which, simple as they are, are really needed by the about 100,000 new recruits that enter the profession of teaching in this country every year. Then comes the methodology of the three *r*s and each of the other branches, a touch of it but not too much of it, lest we whip up the teachers' small modicum of knowledge into a froth that seems bulky because it is only syllabub, lest we analyze processes which analysis paralyzes, put method before matter. Something of the history of education and something about the child is taught here, and, perhaps best of all, is the new school hygiene, physical, mental and moral, so that the school may be in fact a temple of health. This, I take it, is about the order of value among the departments of elementary pedagogy. Hygiene is, perhaps, the most cultural of all these branches, or should be. Of course pedagogy for the grades is far older and therefore better developed than that for the high school. It is in this field, too, that most of the great pedagogues in its history have done their work, and of them most of the theorists have chiefly written. Here, too, method and matter are far more plastic than in the high school. Teachers have less knowledge and less complacency and there is more incessant reconstruction. The numbers of schools and teachers here is, of course, by far the largest, and there are some great open questions in which all are interested—age of attendance, compulsion, religious and moral training, taxation, how far the State should go in paternalism, etc., etc. Children, too, are more plastic, and now that the whole world goes to school, every problem of pedagogy is vitally economic, and in a republic primary education is the bulwark of the State and here nothing is so practical as a good theory.

But I hasten on, for I can hardly wait to nail up the thesis I wish not only to define but to convert you all to, which is that there is no department now represented in the college or the university that combines so many educational factors as pedagogy if rightly conceived and taught. Of course you smile and say that it is natural for every specialist to think his own men-

tal goods best, just as the sky seems highest over every one's head wherever on the round earth he may happen to stand. All I answer is—compare the subject when I have done with whatever branch you know best or esteem highest.

Pray listen and understand also when I say that the pedagogy I plead for is not fully represented anywhere, but is only like Milton's tawny lion pawing to get free from the glebe out of which it arose. It is not only possible but coming, and every single element of it has been tried and is now working well somewhere so that I idealize nothing, but only synthetize.

a. First of all I plead for the history of education in a broad sense, comprising all those processes by which the higher culture, religious, moral and mental, flow down from loftier to lower levels or from age to infancy and youth. It is history not of the origin but of the diffusion of learning and of virtue and of the effects of every kind of culture. It tells why the Chinese, though erudite, became stagnant; how and why Japan awoke; why Thibet slumbers on; why India was paralyzed by caste and by precocity and by the very wealth of its literature; it epitomizes the story of the development of the Old Testament and its cult; the incubation period and then the rise of Christianity and the burden of the new message and the response to it in the human soul; what Greece and Rome did for their boys, girls and adolescents and how they were inducted into manhood; what the great men of every age did directly for them and on what mental pabulum the larval period was fed. It has a pregnant if brief word concerning the founders of the great ethnic religions, Confucius, Buddha, Mahomet and the rest, and how and why they all spread. It rehearses the story of the church fathers, of the cathedral and cloistral schools, the rise of the universities, of the great secondary schools of the 16th and 17th centuries. This history has a wide range. It includes the kindergarten and also the university and would interest all students of all departments in all these grades of work. The High School needs to know the kindergarten as well as the grades. It passes in review the theories and treatment of children in various periods and races, and traces the origin of the modern school in the chief European lands and makes a special point of bringing information and interest up to the present year in each leading country. It is not restricted to regular schools alone but concerns itself also with the training of defectives, with charities, reformatory institutions, juvenile crime and however and whatever efforts have been made for the improvement of the young. Wherever these themes are at issue their historic pedagogy should be on hand. Junot's reform of education for the African child, four years of purely indigenous culture before anything English or European—

Leitner's work in the Punjab, also based on high indigenous culture—the story of the Kaffir child, the training of Indians, of aborigines the world over; how submerged races take up the white man's burden; child labor laws; the age of consent, etc., not forgettlng the study of the different philosophies of education, for this is perhaps most useful of any, giving a wholesome professional spirit to the candidates for the teacher's office and it orients and gives novitiates respect for their calling. How I have myself felt the glow caught from a great teacher who explained Plato, Fichte, and the rest *con amore* till everything else in the world seemed to pale in zest beside the perfervid enthusiasm of humanity with which these master humanists wrought and taught. Such a course is hard work and for a life time of incessant toil on the professor's part. It has all been done, though perhaps never all of it by one man, but conld be if he gave his life to it, and what kind of history can be more liberalizing or humanizing than that of culture, and what is better fitted to transcend the now progressively narrowing limitations of specialization than such a course? The expert colleagues of such a professor in faculties would naturally look a little askance and perhaps prate as they have done of universalogists, but this still is needed not only for teachers but for the general culture of all students. For myself, I defy the pedantry and affected thoroughness of narrow men who do not realize that broad views come before special ones in the order of development. If any expert says such a course must necessarily be superficial, I reply that superficiality has a very important place when the mind is all surface and has little depth. Such seeds as these grow in the shallowest soil, but can strike roots down to the very bottom of the deepest. Youth needs a diet of germs and to have its soul all grafted over with buds, to be spurred by hints that are not followed up. You may call this general culture history, if you wish, but there is more and more need of it as electives multiply and grow acuminated. It is the story of the growth of man in all times and climes, of his struggle against ignorance and toward knowledge, of efforts to help him.

b. Next in importance to history, I should place the study of childhood and youth. I cannot agree with my venerable friend, Dr. Harris, that general philosophy should be a part of pedagogy, nor would I teach psychology as a whole, which is far too vast a topic, but I would lay chief stress upon psychogenesis and hygiene. It is no longer necessary to urge that the teacher should know the child as well as the subject to be taught, or to insist that he does not and cannot know the child without special study. That battle has been fought and won all along the line. The psychologist has as much to teach

adults about the child's soul as the anatomist and physiologist has about its body.—Growth in height, weight, what favors and checks it, development of strength and dexterity, what helps and hinders it, health and the different diseases from infancy up to maturity, temptation, crime, vice, virtue, sex and its psychophysical metamorphosis, religion, associations, plays, games and exercises generally, the feelings for nature, society, sex and co-education—all these and many others are now great and growing expert questions, each with a vast literature of its own. But as this function of pedagogy for the high school is one on which I might easily and unwittingly bore you, I will forbear and pass to my third and final point.

All grades and topics of secondary education are now in crying need of larger periscopes. Educational values of all kinds of topics and methods and organization are the most vital themes of all, and will you permit me to add that in my opinion they are not sufficiently considered by secondary teachers, partly because they are so fortified and complacent in their respectability, so sheltered from innovations that come to them only from the college above and the grades below and so dependent on, if not subservient to, academic dictation as well as to the customs and traditions of the past that they have been proverbially the last to feel the great historic movements of reform. In view of the flood of new life that comes in at adolescence, more suddenly to American youth than to any others, the present relation should be exactly reversed and the high school should dictate to the college and say, "Here are our graduates. We have done what we deem best for their age and stage. Take them from our hands or leave them, but we must decide how to prepare youth for what the college offers," and the latter would soon enough come to terms. Teachers would no longer be content to be praised by their college masters as good and faithful servants and as mere fitters. They must prepare the average youth to leave school forever as the great majority do at the end of the course, as before, for no sophistry can identify the work of fitting for college and fitting for life. The public high school is the people's college and responsible to the tax-paying community and to the public, not to the college dons. If there must be college entrance examination boards, you should control them, and if certificates, you should issue them and take the onus and rise to the larger views and responsibilities involved. You are far more qualified to judge what is the greatest educational good to the greatest number than the cloistered academic specialist who now in the eastern part of this country dominates secondary education to an extent unknown in any other place or time in history, for in the West

and in every European land such obsession is unknown. It is a local and transient feature.

Let me merely name a few other problems of the higher high school pedagogy. One is that of feminization, since 60 per cent. of the American public high school pupils are girls, far more, of course, in the upper than in the lower grades, for boys drop out and girls stay. Even in private fitting schools, it is now the mother or the aunt, as I have learned from correspondence with a number of them, that more often places the boys in the school, visits them and is the medium of communication between the home and the schools. Girls, as every one knows, are more mature at the same age than boys, but they take less kindly and later to specialization, are more content to do what other girls do, while boys yearn to do something for and by themselves that no one else knows or does in order to express their individuality. The whole vast cultural problem of coeducation in the high school is now opening here, not only in frequentation, but in topics and methods for the public high schools seem slowly tending to become girls' schools. To even discuss this question intelligently, one must know much of the psychology, physiology and sociology of sex in its broader aspects, and be able to correlate this question with the larger one of marriage, birth rate, public hygiene and the more specific problems of sex, and surely here we should all be open-minded to both sides of the great discussion that impends. Girls are more generic in every aspect of body and soul. They are better representatives of the race as a whole and closer to it than males. Sex differences run deeper and are far more pervasive than we have thought, and surely we should all be interested in and informed on both sides of this great coming discussion.

Again, there is the problem of English, real knowledge of which half a dozen consensuses agree is now on the whole declining. At any rate, all admit that it is in a very unsatisfactory condition. To find the causes and cures, one must study broadly the child's whole linguistic environment, inquire why slang seems now the *lingua franca* of youth, how the sentence sense develops, why the long Latinized sentence of Macaulay, Addison, Burke and the rest fit the operations of the youthful mind as Saul's armor fitted David, and in general study some of the deepest problems of the individual and of racial speech development including especially the relations between the genetic psychology of language, which seems to be the only real grammar of our grammarless essentially Anglo-Saxon terminology. Ever since parsing was discredited and Latinized translation English came in, we have been wandering with no certain orientation.

Again, there is high school physics, chosen half a generation

ago as the entering wedge of a larger dispensation of science for the secondary school and on which professors of this branch have lavished so much painstaking care and published so many text-books and courses, while despite all these promoters the subject has steadily declined until to-day only between seven and eight per cent. of high school boys take it at all in any given year. Here, the larger pedagogic view must take into account the historic development of this subject before it was so dominated by mathematics, must weigh the natural interest of boys in scientific toys, the fact that many libraries report that more of them read the Scientific American and its supplement than any other journal, must weigh the value of the lives of the great physicists and of all its popular aspects. Argentina is now seeking to develop a secondary course, making such large use of the apparatus of conjurors and of scientific toys that the course might almost be said to be based upon these.

Then, too, is the burning question of Latin which has gone up by leaps and bounds till between 50 and 60 per cent. of all public high school pupils in the country take it with the result that the average attainment in Latin, despite all the new methods, appears to be declining. At any rate, results of teaching this department are, on the average, as indicated by Conradi's statistics immensely inferior to those attained in European schools where teachers teach and are not content to be mere lesson setters and hearers, exacters of work and markers. Several studies indicate that Latin and algebra, which are so eagerly begun because they seem to mark the beginning of the higher education and give a sense of having crossed the Rubicon between the learned and the unlearned, soon lose their charm, and that one important cause why boys drop out up the grades is because of mental inanition and dissatisfaction with a study so formal and which fits for almost nothing in life save teaching.

So of modern languages. This country has suddenly become a world power and stepped out into a larger cosmic horizon and our international rapport has widened as political and industrial functions have expanded. Meanwhile, French and German have increased very slightly indeed in the high school during the last ten years and Spanish, for which there is such a vast and rapidly growing demand from the South American trade, from Mexico, our relations in the Gulf and in the Philippines, has scarcely made the faintest trace upon the curriculum of the high school. I point to the fact that French and German are still taken by so very few as compared with the traditional topics, after algebra and Latin as another indication how the modern high school is isolated from the vital needs of the new era upon which we have entered.

Now I have lifted up my feeble voice in recent years before associations of high school teachers in English, Latin, physics and modern languages at length in the direction here indicated, but it is only *vox clamantis in deserto*, and the reason that nothing is done is because the problem is so great that more and vastly abler men than I are needed in each of these fields with time to study all the broader aspects of these themes, so I pray you not to judge pedagogy by what we pedagogists have done so far or entirely by what we can do, but to realize that there is a vast field and an urgent need far beyond our power. What immensely salutary and epoch-making work you might accomplish if you were to rise to the present opportunity and organize to study different aspects of the relation of the high school to the living, palpitating, cultural, industrial and political present! Educational statesmanship, it has been said, is that in which all statesmanship culminates. Why do you not yourselves grapple with these questions without waiting for college or university initiative or leadership? You more than any others are the real masters of the present educational situation if you would but realize it, and when I think what you could do, I begin at my time of life to see visions and you younger men should dream dreams and work with those ideals which are the best materials of prophecy and show again to the educational world that there is nothing so practical as good ideals which are in fact only the most economic working plans.

Perhaps pedagogy ought not to be a specialty at all, but is too great and complex, and had better be regarded as the culmination of all culture, for at bottom science, art, literature, technology as well as home, society and religion are valuable only in so far as they contribute to bring the human race to an ever high and more complete maturity. Man to-day is only the embryo of the superman that is to be, and the worth of all of these institutions is measured by what they do for the great cloud of witnesses who are to people this earth far more densely long after we are dust. Thus I hope you agree with me that pedagogy, as it ought to be conceived, is the art of applying culture to secure the most normal and maximal development of rising generations at all stages of life, and that nothing has worth save in so far as it contributes to this supreme end.

THE MEDICAL PROFESSION AND CHILDREN[1]

By G. Stanley Hall

Those were indeed remarkable days in which this institution was born. Thomas Jefferson was then midway in his second term as president of the United States. There were seventeen states in the Union, and Ohio, the last to be admitted, was four years old. The Mississippi River had been our western boundary till 1803, when the Louisiana Purchase more than doubled the area of the Republic. Only a year before your charter was granted, Lewis and Clark had returned from their 8,000 mile expedition exploring and establishing our claim to the Oregon region and making the Pacific Ocean our western boundary. Two years before, at the Battle of Trafalgar, the power of Spain in the New World as well as in the Old began to totter toward its fall and the way was prepared for the acquisition of Florida and the great Southwest which Aaron Burr had the sagacity to anticipate by what was charged to be a conspiracy, of which, however, he was acquitted in 1807. This and the Embargo Act, which closed all our ports to foreign trade and was repealed the same year, just a century ago, had crippled the East so that statesmen feared for the future predominance of the Atlantic States in view of the vast future they foresaw for the West, but also in 1807 Fulton's first steamer, the Clermont, made its first trip up the Hudson to Albany in thirty-two hours. Congress, too, had just provided for a national road from Cumberland, Maryland, to Ohio. The Barbary Pirates had been humiliated, the Chesapeake Incident and the Proclamation of 1807 ordering British armed vessels to leave our waters and other events leading on to the War of 1812;—these laid the foundations of our naval power and contributed to the supremacy of the eastern states and to consolidate the North and the South under the so-called Democratic Republican Party which had elected the great commoner of Monticello to his second term and which upheld his magnificent statescraft which culminated in his national education policy by which the foundations of your institution were influenced, if not indeed directly inspired.

You were the fifth, in time, of the 152 medical schools now chartered in this country, large and small, some alas, very

[1] Address at Centennial of the Medical School of the University of Maryland, May 30, 1907.

small in every sense of that pregnant diminutive. Baltimore had then a population of only 40,000 and you had already been struggling with a small organized faculty since 1807. Beginning with the graduating class of five in 1810, you will soon have 6,000 graduates in medicine from all parts of the country, many of them filling important positions in other states.

In quality and leadership, your record, too, is a proud one, showing that your helmsmen have held their tiller true between the Scylla of conservatism and the Charybdis of too radical progress. You were the first institution in the land to compel dissection of the cadaver, to give instruction in dentistry, and to establish independent clinics for the diseases of women and children, and for eye and ear troubles, and one of the first to establish a medical library, to teach hygiene and medical jurisprudence, and to provide clinical instruction in your own hospitals, open at all times to students.

Your classic old building, begun in 1812, which was long the most imposing architectural installation the profession could show in America, federation with the historic St. John's College at Annapolis, now under the able leadership of President Fell, the re-creation of the school of law in 1869, under the masterful hand of Professor Poe, the addition of a dental department in 1882, the affiliation of the Maryland College of Pharmacy, then sixty years old, in 1904:—these are milestones of an indeed unique progress by which a University with over 1,000 students from Baltimore alone has developed around the nucleus of a medical school, as in Salerno, the oldest of the mediæval universities. And your history as written by Cordell[1] and by Steiner,[2] is a valuable contribution to the educational records of the country's progress. Thus it is that you have kept pace with the marvellous advance of the country during the century, throughout which progress has been the dominant note.

In no department of life or thought, however, has the advance been greater than in the field of the theory and practice of medicine, and what contrasts are greater than those between methods in vogue when you began and now? Since then the microscope has created half a dozen sciences of objects, the existence of which was almost unknown a century ago, but which are most vital for life, health, reproduction and disease, sciences which have re-created both interpretation and treatment of symptoms; chemistry has become, in the language of one of its

[1] Cordell, E. F.: Historical Sketch of the University of Maryland. Friedenwald, Baltimore, 1891. pp. 218.

[2] Steiner, B. C.: University Education in Maryland. Johns Hopkins, 1891.

experts, less a science than a group of sciences, and nowhere has their service been greater than to medicine. Anæsthetics, antisepsis, antitoxins, the ophthalmoscope, the stethoscope, the long war over the cadaver and the later one over duly controlled vivisection; all these things and many more have widened the scope and increased the efficacy and therefore prolonged the period needful for preparation for your profession. In view of all this, it is no wonder that Billroth urged that the history of medicine should be taught in every university as a part of the world's culture history. But a stranger cannot do justice to your history or a layman to the progress of medical science, and so, for the time allotted me, I venture to invite your attention to a few points in the broad field of social therapeutics which are of common interest to the physician and the scientific psychologist.

1. The first of these is the growing tendency to celibate life. From an exhaustive study of the statistics of the graduates of nine of our oldest colleges for men and of four for women it appears that ten years after graduation about one-fourth of the men and one-half of the women remain unmarried.[1] In our grandfather's days marriage was early and was contracted joyfully, almost as a matter of course, but now not only in our land, but in every country of western Europe, especially among those in easy circumstances, young men and women delay, deliberate, weigh the attractions of single and of wedded life, consider social and even pecuniary pros and cons till the golden dawn of youth advances to the high noon of maturity and, in Herbert Spencer's phrase, "The motives that make for individuation become too strong for those that make for genesis." The love of freedom, the desire to escape domestic responsibilities, club life, the increasing expense—all such motives should be as nothing to the fulfillment of the great laws of nature and of God. I am no advocate of most of the premature or unpractical measures that have been proposed, the taxation of bachelors, Galton's scheme of endowing wedlock for those inclined and pronounced fit by a commission, or even of forbidding it to any considerable classes in the community, despite the lessons of the Jukes and the Binswangers, Margarets, Aubry's Kerangel family and the tribe of Ishmael, least of all of any fantastic and demoralizing scheme of the trial marriage order, but I do maintain that every man without the handicap of grave hereditary disease and with even a comfortable wage should marry, and that our girls should be trained for home life rather than to secretly nurse the ideals of

[1] See "Marriage and Fecundity of College Men and Women," by G. Stanley Hall and Dr. Theodate L. Smith. *Pedagogical Seminary*, 1903, Vol. 10, p. 275 *et seq.*

single blessedness and to ape mannish ways, and that even those thus trained will thereby be best fitted for self-support, should that be their fate. If the cynical views of the wedded state too rife in the press and in conversation shake the healthful instinctive faith that joys are doubled and troubles halved, then I would even urge that as it is the citizen's duty to pay taxes and, if able-bodied, to take up arms if his country's life is at stake, so wedlock is a social, patriotic and religious duty which it should be a point of honor not to shirk. I plead for no rejuvenated platonic state with a tribunal before which every vigorous man from thirty on must seek certificate or exemption, yet even this has been advocated by serious publicists in Europe where more and better soldiers as well as toilers are wanted. I do not argue the case which many of our leading Catholic brethren are now pleading at Rome, that the clergy be no longer forbidden, but should be encouraged to marry, for the State and the church both need the offspring such men would give to the world. When man has as fully domesticated himself by civilization as he has domesticated the animals he rears with such wisdom and care, the voice of the medical profession will be heard upon this problem of the national and racial economy, for nothing in the world is quite so precious as heredity, and those with most ground for pride in their own ancestry should feel most keenly their obligations to transmit the sacred torch of life undimmed to future generations.

2. Close to this problem lies that of fecundity versus race suicide. President Eliot long ago showed that Harvard graduates did not reproduce their own numbers, so that if all the sons they rear went to Harvard that institution would decline, and the same is proven in the case of at least seven other northern colleges and is true to a still greater degree of women graduates. In France, the birthrate has for a long time but little exceeded the rate of death, so that that country is nearly at a standstill. For the white races throughout Australasia, the decline of birth is more rapid than in any other part of the world where such statistics are kept, although it has not yet quite reached the critical point of equilibrium. In England itself, which once stood near the head of all lands in fecundity, progressive sterility is now so marked as to cause anxious forebodings and medical and parliamentary commissions and various societies have been organized to study and to stem this downward tendency. In Italy, Russia and even in prolific Germany, the same decline is more or less pronounced, for the birthrate is tending toward the ominous ratio of twenty per thousand and various groups of learned, patriotic and philanthropic men, organized and unorganized, are pondering the causes in our own country. So many official voices have

spoken that eugenic clubs and Fabian societies are sure to be heard from by the great public in the very near future. This tendency is most marked among the old families of New England in the region of abandoned farms and decadent, moribund stirps. Those most prolific in this country were themselves or their parents or grandfathers were born in Europe. The most rapid increase is among the poorer classes and among those who inherited the promise of the great covenant of Jehovah with Abraham that if they would do his will their seed should be as the stars of heaven for multitude. Progressive sterility, Gibbon tells us, attended the decline and fall of ancient Rome, as it does the extinction of the many moribund stocks of primitive races. Sidney Webb marshals a mass of evidence to show that to-day the chief cause of this decline is "deliberate volition," and the late head of the Bureau of Statistics and Labor says that "This cause has more effect in reducing our population than war, pestilence, and all other causes combined." The old idea of large families has given place to that of small ones, and that of early to that of late child-bearing, so that, as Chandler has shown, the interval between generations is increasing, especially among the upper classes, while in the lower there is one generation more every two hundred years than among the former. Bohannon[1] and others have described the pathos of the only child in a family whose parents under the mistaken ideal expressed by the slogan *unus sed leo* lavish upon one child all the care meant to be diffused upon many in the effort to atone by nurture for the enfeeblement of nature and the thwarting of her deepest instincts. Heredity is not the only most precious and ancient form of all wealth and worth, but Huxley said that one ounce of it was worth a ton of education and modern dramas, and novels galore represent posterity as a great cloud of witnesses calling to us, demanding the right to be born and well born, with the desire to revere us as we revere our ancestors. The old families of the South, despite the hardships of the last generation and a half, have an enviable record compared with us of the old Yankee stock. It would be hard, indeed, if we descendants of the Puritans ever have to offer our *morituri salutamus* to you, the offspring of the cavaliers, but if that day ever dawns, we must admit that it is you and not us who have inherited the promise. For the true test of all the influence that make up civilization, as of domestication, is the producing and the bringing to fullest maturity of the best and most children. Real struggle for existence to-day is the struggle whose offspring should inherit the world and wield the ac-

[1]Bohannon, Eugene W.: The Only Child in the Family. *Pedagogical Seminary*, April 1, 1899, Vol. 5, p. 475-96.

cumulated resources of civilization in the far future. The 1,500 millions that people the earth to-day are but a handful to those who have lived and also to those who shall crowd this teeming world when we are all dead.

3. But it is not enough to bear children; they must live and thrive. Amidst all the sin and woe of the world to-day, I know nothing more pathetic than the bitter cry of infants for milk, pure, fresh, abundant, and, above all, natural. In England and Wales, where 120,000 infants die each year, Newman[1] has shown that deaths during the first year are about five times as numerous among children fed upon cow's milk and artificial and proprietary foods as among those that are breast-fed. Bunge's[2] statistics show that in Berlin, despite the asservations of many physicians to the contrary, mortality is six times as great among those not fed at the breast as among those that are. In many cities of the Old and a few of the New World, comprehensive, special studies point to the same result, so that it is a conservative statement to say that those artificially fed are from three to six times as likely to die before the age of one year as those normally nourished. In Middle Europe, about one-half of the mothers are not able to nurse their children sufficiently during the first nine months of life, and this sad proportion is increasing, and of Bunge's 1,629 cases, mothers taken at random, two-thirds were unable. Röse's statistics are most comprehensive. Out of 157,000 individuals in his tables, those reared at the breast were not only more viable in the early stages of life, but they were heavier and taller at all stages of life. Far less were rejected as unavailable for the army and their longevity was greater. Not only this, but every three months of natural nursing increased each one of these advantages. So strong is German sentiment upon this subject that a law has been drafted, though not yet passed, heavily fining not only all mothers who can but will not nurse their offspring, but also those who advise them not to do so. It is very difficult to determine the proportion between genuine inability and disinclination. There is a certain stage when the best mother is the best nurse and when everything should be subordinate to this lacteal function. Without it not only physical but affectional motherhood is incomplete in its higher qualities. A race that thus neglects posterity has already begun to decline and even anthropometry shows that children thus handicapped in the earliest stage of their development suffer not only physical but mental and moral

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[1] Infant Mortality, a social problem. Methuen, London, 1906. 326 p.

[2] Die zunehmende Unfähigkeit der Frauen ihre Kinder zu stillen. 3rd ed. Reinhardt, München, 1903. 32 p.

disadvantages throughout their lives. They are especially more prone to rickets and dental caries and to summer diarrhœas, the mortality from which latter seems to be from twelve to eighteen times as great for those artificially fed. The power of adequate lactation once lost by a mother is rarely regained in her posterity. There is now a general consensus among experts who have given this subject most attention that the chief cause of this first stage of sterility, for such it is, is voluntary, and this ominous social danger of our day, which the limited statistics at hand indicate, is greater in this country than in Europe, should be resisted by physicians by every means at their disposal.

This physiological separation from the mother at birth has often been compared in its effects to premature delivery, and it is becoming a distinctive feature of civilization, for the savage mother has abundant milk and to spare.

If infants of the future must be thus parted from their mother and the maternal function thus abridged and dwarfed, while our offspring become parasites of the cow or dependent upon proprietary foods which are of vegetable and not of animal origin, we must look well to the composition of the latter and control the transit of the former at every stage from the cow to the infant's mouth. Organic chemistry is yet in its infancy and is far from being able to reproduce such compounds as the lacteal fluid, which even Bunge calls one of the most complex and marvellous of all the products of nature containing in it everything that the body and soul of the child needs for the first year of life. Milk, as every one knows, is subject to very many kinds both of pollution and infection, and is a veritable trap for bacteria. No pasteurization or sterilization, condensation or any other process can give it anywhere near the value of mother's milk, whatever physicians who have not followed these recent studies or who are too complaisant with their patient's inclinations may say. On the infant's side, too, all these substitutes for nature's provision are more easily imbibed with too little effort and are often too abundant, so that overfeeding is more liable and the stomach, gorged with starchy food and with animal milk, with far too large a proportion of some ingredients and too little of others, readily becomes delicate and sensitive and the curve of mortality sometimes strikes upward in the sultry days of August several scores of points on the percentile grade. We have learned to prolong the average length of life among adults, have greatly lessened the death rate from various diseases, but infant mortality has not only not declined, but has slowly and steadily increased in all countries where such statistics are kept since the eighties of the last century. Thus, our infants cry and far too often die

for want of the food which nature has so marvellously prepared to meet their needs. You all know the new demands now urged upon many and adopted by some American cities of assuming as complete control of the milk as of the water supply and not only putting it up in suitable quantities for each meal, but giving it out at free public dispensaries to all who need it, and even providing nurses gratis to go about and teach its use, as well as the care of new born infants generally. After weaning and during all the growing years no food is probably more conducive to growth than an abundance of fresh cow's milk, and its adulteration or pollution is a crime without a name committed against childhood. The war for pure country milk, in cities is spreading to-day over the whole civilized world, all the more that the human supply is failing and it is now one of the most important problems of national health and prosperity. It should be one of the first items in the bill of rights for childhood.

4. When the child begins to pass from the home to the street or school, it no less needs the care of the new higher social medicine. Urban life is especially hard on childhood which needs the country brought to it in playgrounds and parks;—and every possible sunny, grassy, sandy, open space counts for increase of health and even life. If the very grave space of each needlessly dead city child were to be added to the play space of the living, there would soon be breathing room enough for exercises, games and gambols. Do I go too far or speak rashly if I suggest that what a municipality does for the health of its children is now a good measure of the standing and the influence of the medical profession in it? Surely, reduced Saturday and other holiday car fares to suburbs and parks, with as much free play over the grass as it will bear (for to what higher use can a good lawn be put?) open school yards every daylight hour when school is not in session, simple public out-of-door gymnastic apparatus and sand piles, the utilization of all unused lots where population is densest, public baths for children in summer and in winter, the opening of spacious private grounds to the children of the neighborhood at stated intervals, spacious sheds where children can play in bad weather, roof playgrounds, crèches and nurseries for young children of mothers away at work;—all these and more are now institutions of the new religion of health of which the physician is priest. These installations now bid fair to take their place, besides lying-in and children's hospitals, orphan houses, institutions for defectives and so forth, and what in all the world is more worthy of love and service than the bodies and souls of the children who bear our name and will soon take our places in the world's work?

The doctor now follows the child into the school, and not only tests eyes and ears, looks for adenoids, anæmia, chlorosis, curvatures, measures and weighs, detects dullards and subnormals, perhaps has a tiny health book open for each child, with the co-operation of parents and teachers discovers infectious diseases in their early stages and removes those who are sources of contagion. He not only selects sites for schoolhouses, roomy, high, well drained, provides sufficient lighting and heating, ventilation, but now studies with great detail mental economy in methods of teaching, suggests the length and hour of the day of the hardest lessons, helps to keep off strain, over-pressure and fatigue and in general strives to make school buildings palaces of health and the curriculum a wholesome gymnastic exercise for strengthening sound mentality. The medical inspection of schools now extends in some places not only to every schoolroom, but to every child, whether in day or evening school, and teacher and pupil no longer dread, but welcome, the physician and he no longer indulges in undiscriminating and wholesale criticism of schools as the chief cause of hygienic defects, whether of individuals or in the community, and the parent welcomes his influence as it penetrates into the home.

5. Lastly, at puberty and through adolescence, or from the dawn of the teens into the early twenties another new field has lately opened rather suddenly before the physician, which may ere long become a specialty, as pediatrics has long been. The advent of this era is marked by all-sided mental and physical changes and there are new liabilities to disease and grave moral dangers unknown before. Dementia præcox, whatever else it is, is, at least, degeneration following arrest. The energies of growth are not sufficient for the full development which is due at this nascent period of man's higher life when nature normally builds a new and splendid story upon the far older and simpler foundation of childhood. The church has treated this stage of life by the cult of confirmation and conversion, and man is indeed born anew, for he now passes from the individual selfish life into the large one of the race and altruism and self-sacrifice are now normally at their very best. But the physician now has a wider and almost pastoral function to youth, to help keep them pure, to teach them that true honor is at bottom loyalty to the unborn, to shield them from the quacks that play upon this callow age with shameless advertisements, which too many newspapers admit, to assuage the fears, often grave but happily mostly, though not always, groundless, that sometimes sap the courage and zest of young men for years, fears that spring from ignorance and are removed by a little knowledge as by magic. I have collected nearly six

score pamphlets and books addressed to boys near the dawn of manhood, all well meant, a very few concise, direct and admirable, but mostly prolix, sometimes prudish and fairly infectious with self-consciousness. What most boys need is a very plain and very brief but always personal talk, perhaps one a year for a few years, from a physician who has some native fatherhood and a little philosophy in his soul and who has given careful attention to this subject. Most American boys reach this critical period singularly well posted in what they should not know about it and still more curiously ignorant of what it is important for them to know. We do seem at last approaching a period of sanity in the pedagogy of secret vice and the old extravagance, insincerity and hysteria about it is giving place to true knowledge and to common honesty. The general reading public now know, thanks to a few physicians who not only have the facts, but have felt the social duty of popularizing them, something of the nature and extent of the venereal peril, and we have been told how to approach our sons upon this shyest of subject at the shyest of all ages. There can be little doubt that since the day of primitive man the age of sexual maturity has been increased, and the later it came, the more the educational period lengthened. Despite the tendencies of city life to precocity and the reversal of this tendency, it is vital for the future of man that the prepubescent stage be not shortened, but prolonged by every available device of hygiene and regimen. Its vulnerabilities make it the most dangerous and its higher possibilities make it the golden age of human life. If one tithe of its dreams are realized in later life, the day of the superman is sure to come.

But on an occasion like this, one can but barely hint of themes so vast and momentous for the public weal. Let us hope that medical science is to-day, despite all its achievements, only in this golden age of promise. If we judged the future by the past, by the end of another century our most advanced knowledge would seem crude and most cherished ideals faint hearted. Because no profession rests so solidly upon the foundations of modern science, none has a better right to expect great things for itself in the future, and none can render such service in developing men of a higher type who will be able to realize high ideals in all departments of human life.

SUNDAY OBSERVANCE[1]

By G. Stanley Hall

The origin of all seventh day observances lies far back of Hebrew or any other history and is found in the worship of the moon, our nearest celestial neighbor, which the heart not only of the lover and the poet, but of every man, woman and child, still adores. Next to day and night and change of seasons that the sun controls, the luna month of 28 days is most marked in the life of man and has cadenced its rhythm into the physiology not only of women, but of men, and made cycles that are more or less marked in disease, in crime, suicide and insanity, so that our life, body and soul, is punctuated with its periods. Its four quarters, new or crescent, half, full and reverse crescent, the day of each evoking special devotions in ancient India, Egypt and wherever luna worship has prevailed, made the week observed among nearly all primitive people long before the Jewish race appeared upon the stage of history. Religion, which measured time by seven day groups has been not only one of the oldest but one of the most universal forms of pagan piety, and this cult has been elaborately developed with deities, temples, sacrifices, feasts and festivals among every one of the great nations with which the Jews came in contact from the time they first became a nomad tribe. About the middle of the ninth century B. C., in their very earliest recorded code, the Israelites adopted the seventh day and were exhorted to keep it holy, especially in the critical seasons of seed sowing and harvest when primitive man always felt most deeply his relation to the divine powers that presided over crops on which life itself depended. Just before the exile, the people's code advocated Sabbath keeping for a new reason, viz., because God had brought them from the Egyptian captivity, so that it now became a national independence day. It was man's day, but with no penalty for violation. Still later Ezekiel commanded its observation for another reason and gave it another meaning, viz., as a sign between Jehovah and Israel, so that it stood for the great covenant. Finally, after the return from Babylon, rest was enjoined because on that day Jehovah rested from the work of creation. Its new name—Sabbath—literally means rest, and it was interpreted as apply-

[1] Address at the N. E. Sabbath League Meeting, Worcester, January 26, 1908.

ing not only to man, but to beasts. It was now God's day and its violation was made penal. Then came Jesus spiritualizing the rabbinical Sabbath with the precept that it was made for man and not man for it. After His death still another sanction was added, for it became the day of the resurrection. Henceforth the Jewish Sabbath was abolished and became a day of memory and of joy for the outpouring of the Holy Spirit which marked the beginning of the world-wide promulgation of the gladdest of all glad tidings, that death, the great enemy of man, was conquered. The Council of 54 A. D., expressly exempted Gentiles from the laws of Moses and sacrifice, and the observance of the day was not legally mandatory for a time until Paul established the Lord's Day as a day of worship and made it to some extent a new institution not resting on the fourth commandment, but on the divine law. It was a day sacred to Jesus. Not until the fourth or sixth century was rest from labor required, and even then its sanctity was for some generations no greater than that of other holy days. It was the reformers, before and after the reformation, who had to seek another authority than that of the church on matters of religious life, who went back to the old Jewish Sabbath, and thus in course of time the Puritan Sabbath, under the shadow of which we still live arose, while the Sabbath of continental Europe remains more nearly that of mediæval Catholicism.

Thus the seventh day has persisted through a very checkered history at first, a purely lunar, a pagan day of feasting and joy, adopted by the ancient Jews, made sacred first to their independence, then to the covenant, then a rest day with most usual activities tabooed, Jesus' rescue of it for man, its transformation into a glad memorial of the resurrection, then of the Holy Spirit, later, the slow evolution of worship upon that day, its gradual emergence into prominence above that of other sacred days, and last of all the Puritan Sunday that sought to restore that of the Talmud.[1] From this very meagre outline we can realize on what deep and ancient and manifold foundations our Sunday rests, what diversity of both sanctions and interpretations it has passed through in different ages, sects and lands, and all these must be borne in mind by all who deal with the great problem of its current interpretation. This brings me to the sole point which I wish to urge which is, that if Sunday had no history and there were no divine sanctions, no fourth commandment or even Bible, church or Christianity, we should still need to observe one day in seven for reasons

[1] Scientific Basis of Sabbath and Sunday, by Robert John Floody. Turner & Co., Boston, 1900. pp. 359.

based upon the nature and needs of man's body and soul, and that it is a vital point of race hygiene for all peoples who would attain or preserve the higher levels of civilizatio

I cannot speak here of those antique sex prescriptions and taboos or of the nameless phallic rites so elaborately associated with many of the old forms of moon worship, save to say that the seventh, fourteenth, twenty-first and twenty-eighth day have, from time immemorial, been held peculiarly sacred to posterity, to heredity, to love in its higher, though, alas, too often in its lowest, forms. Thus among the most ancient associations transmitted to us from the past are those of the day hallowed for each generation to the cloud of witnesses which in the future are to spring from their loins. It is not without significance in this connection that several eminent biologists have suggested that for wedded adults the great theme of the transmission of life, the evils that threaten it and the duties that it enjoins might be a fruitful theme of Sunday meditation, for this function is at bottom the supreme test of the value of every human institution and of moral good, for here virtue and vice have their chief citadel, while just now these themes are being everywhere forced upon the attention of the world with a plainness and urgency without parallel in history.

As a day of rest, Sunday is also now reinforced for the individual as never before. Just in proportion as life grows tense and strenuous there is a weekly as well as a daily fatigue, and even the normal night's sleep does not wholly repair the wear and waste of the day, so that the curve of recuperation sags as the week of working days advances. Over and over again employers of labor have testified to the economy of the seventh day of rest, that the quality and quantity of industrial outputs were increased thereby, despite the initial Monday decline in efficiency often also noted. As long ago as 1853, 641 British physicians and many other societies of learned men memorialized Parliament that both brain and muscle workers needed about one day in seven for supplementary rest in addition to that of nights in order to maintain their maximal vigor, the tenth day which the French revolutionists substituted being too long and the fifth day being too short an interval. Fatigue is one of the most insidious foes of modern life. Exhaustion weakens all the defences of the human system which nature so abundantly provides against the hosts of bacteria always entering it, and which a rested body can so easily destroy under usual conditions. Fatigue is the mother of many diseases, some of which are only intensified forms of it. Nerve and brain stress and manifold forms of neurasthenia are greatly augmented by the growing specialization of industry because a single part of the organism is overworked and other parts go

without sufficient exercise. Thus, as one of its functions, Sunday must relieve the overworked and set into action the overrested parts and functions of our frame. Sunday must thus bring relief from the narrow rutty activities of the week, and let us be again whole men and women and thus it should make for breadth, humanistic culture and become a hygienic philosophic institution. Rest for healthful people is less idleness and inactivity than it is change and recreation, for diversion positively helps to the restoration of the overwrought and frayed elements of soul and body.

In all the answers to stated questions which Hylan[1] collected from all sorts and conditions of people as to what they got and wanted from Sunday, rest and recreation stood first and hardly one desired to continue the usual week-day vocations. Most wanted to look forward, backward and around in a larger, higher way, to rise, to front the great elemental questions of life, duty, family and social relations, to forget sordid cares and reinforce the higher life by communion with the best factors in their environment, to be again whole men and women; and whole means healthful and holy.

To this end it seems to us plain that libraries, reading rooms, museums, art galleries and all parks, and every possible access to nature should be open on Sunday, at least a part of it, with all suitable precautions, and that Sunday newspapers, which are truly such, should be favored and not discouraged; that lectures, concerts and good music indoors and out of doors, in its season, should be provided, and that the purer forms of recreation and exercise are entirely permissible, for these make for race advancement, while, of course, everything that tends towards deterioration, moral and physical, should be rigidly suppressed. The so-called necessary work of steam and electric railroads, mails, freight transportation, unloading of, at least, all but perishable cargoes, harvesting in seasons of stress, most theatrical exhibitions as theatres are, all the crasser amusements and everything that tempts to evil should, of course, be minimized, and if in Sunday legislation the choice is clearly between two evils, we should often not hesitate to choose the least, though it contain evil, than to forbid both by laws which it is impossible to enforce. The great and growing majority who do not statedly attend church have their rights, and as we cannot revive the blue laws, we must not legislate with the indirect design of corralling outsiders into the church by making them uncomfortable outside it.

For this class and for all discussion of the question, it is im-

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[1]Public Worship: A study in the psychology of Religion. By John P. Hylan. Open Court Pub. Co., Chicago, 1901. pp. 94.

portant to consider what it is now the custom to call Sunday feeling. Copious returns from large numbers of people show how deep and strong is the instinct to make the whole regimen of Sunday as different as possible from that of the week. Many specified as Sunday charms, freedom from all slavery to the clock, better and more leisurely toilets and meals, the hush of noise on the deserted street, the greatly intensified charm of the sky, sunshine, trees, fields, pleasant morning anticipations for the day, more zest for reading and perhaps study, converse with friends, calls, visits, music, correspondence as well as rest pure and simple, for body and mind. These supervene of themselves to most on Sunday morning, and surely all those who cultivate these things in any wholesome way are with us and not against us.

But on this foundation, which must be kept deep and strong, Christianity has built a magnificent superstructure of worship. It has reared homes for God where He keeps open doors to receive all guests—from the magnificent cathedral with its lofty arches suggestive of the groves, God's first temples, to the little churchlet with its spire pointing the soul upward. Until I read these intimate confessional returns from hundreds of Christians of every name and all parts of the land, I never realized how every item of every type of Sunday service, even to its minor accessories and details, had laid hold of man's very heartstrings. The pealing bells which seem to say that all is well in heaven and on earth, and calling, calling to prayer; the walk or ride to and from church, like no other because nature seems so new and divine; social intercourse when friends come more close than on other days; the dim religious light often suggesting twilight and forest, the two most healthful of all environments for worship; the sacred symbols and mottoes, perhaps pictures and crucifixes, the sacred altar or desk, the fluted organ and the pealing tones of music, which is the language of the heart and not of the head, like speech; the stately vestments, the choirs and perhaps processionals and the incense from the swinging censer, the bowed head and bent knee, the reading and perhaps intoning of litanies, responses, sacred texts and prayers hallowed by the association of centuries; the sacraments of baptism, signifying the washing away of sins, and of communion, which makes us flesh and blood partakers of the death and resurrection of our Lord, the ineffable charm and sense of betterment that all and each of these bring to sympathetic souls is something above the present reach of all the theories of ethics or the psychologies of religion up to date to explain or even to comprehend. Even the collection, the attenuated relic of sacrifice of animal and once even of human victims, rebukes selfish greed and stimulates sympathy with

need and pain and love for our fellowmen. These are the most efficient agents the world has known for making the individual feel his solidarity with the race and his kinship with God. At their very lowest they are masterpieces for stimulating man upward and onward toward the higher life of the superman who is to be later far beyond what we have attained unless optimism, evolution and prophecy are all false. What a repertory of methods and instruments for the work of the divine pedagogue, as Tertullian called the Holy Spirit, and how they each and all lay hold of the past, the present and the future and compel communion with the oversoul that guides to all truth, beauty and goodness! How it all incites to self-examination and, at least, inner confession, showing forth the whole life of the body and soul in the perspective of eternity, where nothing survives save the measureless distinctions between good and evil!

As to the clergyman in his sermons, which to many of us Protestants constitutes the heart of the service, this is not the place nor I the man to speak, but I would have both, virile and practical, saturated with idealism, both moral and religious, for there is nothing so practical as the ideal. The preacher must know the human soul and Scripture, the inspired textbook of the human race in psychology and ethics, bring forth all the positive but never any of the negative results of the higher criticism and of science, always fulfill and never destroy, with more of the old denunciation of sins of appetite, greed, selfishness, lust and lawlessness that abound in every community; not be always silent on current events for fear of sensationalism, but intent also on building up the kingdom of righteousness within the soul that chiefly needs quiet personal edification; able to preach with fervor and in proper season, to command waves of religious revival and also to preach the duty of perennial personal culture; able to sway multitudes by the matchless story of the cross or to persuade the few academic doubters who are passing through the stages of mental enfranchisement to narrow views, eloquent to men as well as to women, a scholar, yet all a man, throbbing with the enthusiasm of a larger and higher humanity. Of course such an ideal does not exist and the theological seminary of our day and land is far from able to rightly equip such an one, but that both will come I have not a shadow of doubt or fear because we need them, and in the story of the world's history the hour always sooner or later brings the man.

The problem of the child and youth as related to Sunday is not solved by the Sunday school or the children's second Sunday in June. Urban children especially who have led the sedentary life of the school during the week would be far better

for more physical exercise than they usually get on that day. Why should the school yards in crowded districts and the hundreds of playgrounds now being everywhere established not be open, at least afternoons, and especially for younger children, and why should indoor activities like cutting and pasting pictures, many of the plays and games from Johnson's list of hundreds, some of which are relics of primitive religions, not be approved? Why not well conducted excursions and picnics to get to nature; I think the burden of proof is now with those who object. If the children's theatre presents only biblical or purely ethical dramas, why close it on Sunday, especially where children are likely to do worse without them in a city like greater New York where there are 1,500 nickel and dime shows, lacking but in great need of, moral censorship, many of which are open to all on Sundays? Surely there should be plenty of walks and talks and nature lessons, and collections of natural objects and specimens should be favored. In Germany, nearly or every kind of manual training, industrial and technical school for the young who are employed during the week are open on Sundays, when the best work is done, and we must not forget in this connection that the original Raikes' Sunday school taught almost entirely secular occupations and day school subjects. The children's room in every public library should, of course, be open under proper supervision. As family day, there should be plenty of home instruction and best of all, stories, if practicable, told by twilight, moonlight or firelight, for nothing is more educative and tales constituted once the sole material of education, so that this is an important element in restoring the lapsing functions of the home. We should, of course, revise and reform the Sunday school and try the Kent plan of one good professional Sunday School superintendent in a city teaching successively the teachers of each denomination educational principles in general and how to do their special work better. All these things and more too there is room for, not to the exclusion of, but in addition to, church going, which takes but a small part of the time, the good old habit of which should be restored.

In organizing the scientific Sunday of the near future, we should always and everywhere accept the meliorists, accepting the relatively better where we cannot get the absolutely best. Perhaps we must welcome the half bad, if its sure alternative is the wholly bad, and sanction almost anything that is better than that which children would otherwise do, and try to make it ever better, compromising with evil if we are unable to eradicate it.

Finally, Sunday is no longer the ghastly day it once was for adults and especially for children. Never was rest and recrea-

tion so cryingly and so physiologically needed as in the strenuous American life of to-day. Never has the church in its service had so many other alluring, if not seductive, outside attractions to compete with. Never was the work of reinterpreting rights, duties and permissibilities of Sunday so vast, delicate, complex and yet so imperative a task, for this is the problem that now confronts this league. To solve it completely demands nothing less than to draw lines between the best and worst in all kinds of lives and communities with countless personal and local modifications and adaptations and adjustments. The day when a few uniform iron laws equally binding upon all everywhere sufficed is also forever gone. We must now look not only to the sanctions of the past, but also to the needs of the present and future. There is no one best way of spending Sunday for all, but many diverse ways—some best here, some there and some not wholly good must be provisionally welcomed till better ways are practicable in order to save from worse ways. Places where mild drinks are dispensed are better for all who would otherwise yield to gross intoxication, and we have suffered and the devil prospered long enough from the old maxim of uncompromising reformers—all or nothing.

More than any other day of the week Sunday has, from time immemorial, been the day when the sexes see most of each other, and every opportunity contributing in any degree to make their relations pure and innocent should be wide open, and every environment that makes for temptation to vice should be reduced to the minimum on that day and evening. In our personal regimen for the free parts of Sunday there is much to be considered in the precept to avoid habituation and routine and vary widely and often, perhaps each week, as circumstances and mood incline, our mode of spending it, for the day must be kept sacred to freedom and uniform all-day Sunday habits are to be avoided.

The suggestion of an hour of solitude and meditation, too, not for children and perhaps not always for youth, but for all adults, merits careful consideration. More or less solitude has always been one of the great resources of great souls who have often been nourished in the desert or the mountain, for it inclines us to front the basal facts of life, duty and destiny alone with God and his nature, its first revelation. Forest shade, the high mountain views, the sea, the shore, flowers, birds, other wild things that live, sunset, twilight gloaming, wind, clouds, storm, thunder and above all the eternal stars speak Sabbath peace to the soul that exposes itself to the contagion of their influences alone. Or if the one impulse from the vernal woods that can teach us much, or from the "flower in the crannied wall" which the poet says can tell us what God

and man are, the celestial communion that made the undevout astronomer called mad, is denied us, then the little corner with some little book or chapter of God's word or of man's best, or an hour alone in the four walls where the dark third of our every twenty-four hours is spent may recruit our jaded moral impulses and shed regenerating influences over the week to come.

But I would not close without a plea for at least one church service of some kind for all, of whatever creed or no creed. Even dressing, going and coming, bells, incidental meetings with friends, that strengthen the social bond, giving, instead of the weekly lust of getting, all help by lifting us out of wonted routine and bringing the grateful rest of change and pulling new stops and playing unused registers in the soul's organ, while bells, hymns, prayers, Scripture, preaching are all pregnant with conscious and perhaps still deeper and more potent unconscious influences that help on the great momentum of evolution, the push upward that God and nature have so deeply implanted as the most precious thing in every human soul; for without some church home, some of the best and highest things in the soul remain homeless and vagrant.

In January, 1906, the workmen of Alleghany County petitioned 800 firms to avoid all unnecessary work on Sunday. Some 400 religious organizations and 30 societies of workmen have joined this movement. It was caused by a sense of the workmen that they were more and more compelled to toil on that day and that they could do more and better work with the old Sunday exemption restored. The petitions urged that those whose services were needful on that day be given another week day for rest and that along with the encroachments of employers upon that day lawlessness and a weakening of moral energy has been caused.

France has never had Sunday legislation and the first Sunday movement was on the occasion of the Paris Exposition of 1889, at which a National Congress of Weekly Rest, the word Sunday being barred by the Government, was held. It was presided over by Senator Say, lasted four days and the stenographic account of its proceedings make a volume of 400 pages. To this congress our President Harrison wrote that even were man an animal and quite apart from Scripture, weekly rest was needful and Gladstone's letter stated that he ascribed the full possession of his faculties at his advanced age in no small degree to the habit of Sunday rest. A propaganda was started and a People's Union For Sunday Rest formed with Jules Simon at its head. In October, 1900, the Government, assured of the purely humanitarian purposes of the movement, consented to an international congress which was attended by

over 400 members from many lands representing many associations and which lasted four days. Suppression of Sunday freight trains was effected ten years before in Switzerland, and since, partly as a result of this conference, in Prussia, Bavaria and Belgium. This has been strongly urged in France where mail delivery stations are now closed. Many of the great shops on the Louvre have been either closed or most of the clerks released and the increase of receipts on Saturdays and Mondays is said to fully compensate the loss. In France, there are three parties upon this question. (1) Those who would invoke the government to intervene. (2) Those who wish legislative action later only when public opinion has been sufficiently aroused, and (3) a small group who oppose all official action.[1]

Lord Avebury proposed a new Sunday Bill in 1905, which was to permit the sale of milk and cream all day and bread, fish, cooked meats and vegetables up to 9 A. M. in the slum districts where, especially in hot weather and in crowded tenements, such provisions cannot well be kept over night without danger of contamination. In this and other matters he proposed to admit some degree of local option. The bill also proposed to increase the present fine for Sunday opening which was only five shillings and was no deterrent and to make it accumulative. It was not drawn up because of the great increase of open shops who could afford to pay the fine. If one trader, perhaps a new comer, opened on Sundays others felt compelled to do so, however much against their will. The House of Lords, however, defeated this Bill on the protest of the Lord's Day Observance Society, while the Lord's Day Rest Society advocated it.[2]

Since Bauschwinger's discovery that after a permanent set has been produced in metals under heavy stress, for instance in bridges, rest increases the limits of elasticity, it has been abundantly shown that fatigued metals have reduced elasticity.

Rev. Percy Grant of New York insists that in the progressive socialization of the church which lays very heavy burdens upon the clergymen the need of prolonged vacation rest is greatly increased.

If Chicago is run as a wide open town, the destructive influences of the saloon will naturally be far greater on Sunday than any other day. An open and above board issue and a frank campaign ought to lead to a more scientific discrimination between industries that are essential and those that really promote rest.

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[1] See E. Deluz: The Independent, 1901, p. 75.

[2] See Lord Avebury's article in the Nineteenth Century, September, 1905, and Peake's argument against it, *ibid.*, November, 1905.

Students of religious conditions in England are concerned over a notable decline in Sunday observances and family worship. The Lord's Day is a holiday and is too often spent in a way that causes weariness. Sunday rates and trains are now in many places discouraged and even discontinued. Some have advocated legislation in this direction.

A new Sunday law went into effect in Canada, March 1, 1907, and among its provisions was the prohibition of sensational Sunday papers and practically indeed of all. The bill was openly opposed by the railways and also by the Jews and Seventh Day Adventists. By this law, not only are Sunday excursions and all work forbidden, but all shunting with yard engines is not allowed between 6 A. M. and 8 P. M., except for cases especially defined. About 100,000 men have been released from toil one day in the week by this law. By a vague clause slipped in, provinces were given certain powers that would to some extent nullify the action of this law, and it has been weakened in Quebec and may be so in British Columbia, but all the other provinces have endorsed the act and have taken measures to enforce it. This is held by the friends of the Sunday movement as a great step in advance.

Justice O'Gorman of the Supreme Court of New York in December, 1907, vetoed Sunday shows in a way so comprehensive as to bring about suddenly a genuine Puritan Sunday, for concerts, peep shows and penny arcades were also placed under the ban. These shows are not conducted for the benefit of the public, but solely for profit estimated at a million dollars a year. The city, as a whole, does not wish for merely variety shows. The board of aldermen, however, who have the power to do so, have modified this law which has been a storm centre for some time. The prohibition of Judge O'Gorman was based upon an investigation which showed that there were 28 theatres and 16 concert halls open in New York besides the one cent shows, and the protest was made, in part, in behalf of the actors and actresses who were obliged to play seven days a week. Some of those who run these places boast that they draw young men from the street and the saloon.

The Unitarian clergyman, E. P. Powell of New York, thinks it absurd to establish one kind of morality six days in the week and another kind for the seventh. He deems it waste of moral force to keep up the semblance of a sacred 24 hours. Opportunities for rest should be enlarged; churches should have playgrounds and gymnasiums open on Sunday. When Agassiz first came to America the worst feature of our society, he thought, was the restrictions of Sunday, for he had been accustomed to hear a sermon in the morning and to play ball with his

pastor in the afternoon, and even John Calvin sometimes adjourned his evening service to go with his people to a theatre, better, to be sure, than ours. Powell pleads for the right to play golf in the green fields on Sunday. The church must give something better than the hard work of listening to illogical sentiments. It is not wise to put handcuffs on for one day and take them off for the other six. Every Sunday enforcement bears heaviest upon the poor laborer. What is right on Saturday is right on Sunday.

In a recent article on Sunday Laws in the United States, the following classification according to States is made:

"The first class is composed of those whose laws are framed according to the British model and prohibit on the Lord's day labor, business, or work of one's ordinary calling only. This class includes Georgia, Indiana, North Carolina, Rhode Island, and South Carolina.

"In the second class are to be placed all those whose Sabbath laws contain strong and comprehensive prohibitory clauses forbidding labor, business, amusements, fishing, hunting, etc., and make few exceptions to the operation of the law besides works of necessity and charity. This class includes Arkansas, Connecticut, Delaware, Florida, Indian Territory, Iowa, Kansas, Maine, Maryland, Michigan, Missouri, North Dakota, Ohio, Oklahoma, Pennsylvania, South Dakota, Tennessee, and Utah.

"The third class embraces those whose prohibitory clauses are materially weakened by making many exceptions besides works of necessity and charity. Some of these exceptions are here noted. Alabama, Kentucky, Mississippi, Texas, Vermont, Virginia, and West Virginia make an exception of railroads. New Jersey excepts Sunday trains and legal notices in Sunday newspapers. Massachusetts and New York permit the sale of tobacco, the printing and sale of newspapers, and the latter State permits also the sale of fruit and confectionery. Minnesota allows the printing and sale of newspapers. The Wyoming law makes exceptions of newspapers, railroads, telegraph companies, news depots, farmers, mechanics, furnaces, smelters, glass works, venders of ice cream, milk, fresh meat, and bread. The law of Louisiana excepts newspapers and printing-offices, bookstores, public and private markets, bakeries, dairies, railroads, theatres, and other places of amusement.

"The fourth class includes those States the prohibitory clauses of whose Sabbath laws are inherently weak. The laws of Colorado, Illinois, and New Mexico prohibit on the Lord's Day only such labor and amusements as disturb congregations

and families. Business is not mentioned. New Hampshire forbids such secular business or labor as disturbs others. Montana prohibits neither labor nor trade. Nebraska does not prohibit trade. Oregon does not prohibit labor. Washington does not prohibit labor, and weakens the clause prohibiting crimes against the public peace by adding, after the enumeration of 'riot, fighting or offering to fight, horse racing, or dancing,' the clause 'Whereby any worshipping assembly or private family is disturbed.'

"The fifth class embraces those that have no Sabbath laws. This class includes Arizona, California, and Idaho."[1]

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[1] W. F. Crafts: The Sabbath for Man. Int. Reform Bureau, Washington, D. C. (no date), pp. 72.

ANATOMICAL OR PHYSIOLOGICAL AGE: VERSUS CHRONOLOGICAL AGE

By C. WARD CRAMPTON, M. D.
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Thesis. Physiological Age should be taken as a basis for all record, investigation, and pedagogical, social or other treatment of children.

Evidence. The term anatomical age or physiological age refers to the stage of development in contradistinction to chronological age in years and months, which is our usual method of age designation.

Individuals of the same species vary in their rate of development, so that any chronological age group will contain some developed far beyond the average and others retarded considerably more than the average. Those who are retarded may take years to develop to the same degree as the average individual of their age group. Those who have been most rapid in development may have passed the average stage of development some years before. Hence, there is a wide variation in individuals, for development means change of bodily and mental characteristics.

Where development is particularly rapid we still observe a considerably greater variation among individuals of the same age. Thus, at the rapid development at the so-called age of puberty there is the greatest variation in physical and mental characteristics.

The child is essentially different from the adult as the larva is from the imago, yet we have not recognized this fact in the treatment of the child where it is most important that we should. There are both the immature and mature forms present at all ages from ten to seventeen, yet we have, *without exception*, classified all children on the chronological age basis.

It is vastly more important for us to know how far a child has developed, and what he *is*, than to know merely how many years and months he has lived, although the latter fact will always have a relative significance.

The present work is concerned in demonstrating, at one par-

This investigation is now continued under the direction of C. Ward Crampton, M. D., and under the auspices of the Committee on the Physical Welfare of School Children, Robert W. Bruere, Secretary, 105 East 22d Street, New York City.

ticular epoch, in what degree physiological age is more significant than chronological age, and in providing an objective basis for observation, with the belief that there will result therefrom a change of our trend of thought favoring the basis of physiological age in place of chronological age.

. . . . . .

The writer observed in 1902 that boys not yet pubescent (as to the pubis) were smaller and weaker than those who were pubescent. These results were presented at the Olympic Congress at St. Louis in 1904, and published in the American Anthropologist, October, 1905. This sign of puberty is second only in reliability to the direct observation of the spermatozoon.

The data for this investigation are 4,800 records from school boys in a New York High School. This school receives its boys from the elementary school at about the age of fourteen years and prepares them in four years (eight terms) for entrance to college or business. They represent all social classes and include a large variety of racial mixtures.[1]

It is easy to distinguish between a complete absence of hair and an abundance of the same and to designate the individuals as *pre pubescent* or immature, or on the other hand as *post pubescent* or mature, but the process of acquiring this growth is a slow one and one may often be in doubt in placing an individual with but a beginning growth in either class. To eliminate this uncertainty an intermediate class was established and called the *pubescent* or maturing class. This class contained all who have anything more than an abundant lanugo and less than a very well defined covering.

The designations "immature," "mature," etc., have reference to the epoch under immediate consideration and designate classes in respect to the secondary sexual sign of pubescence. There are other epochs and signs of physiological age in both boys and girls such as the appearance of the various teeth, menstruation, menopause, etc., which are also presumably more significant than their related chronological ages.

Table No. 1 below gives the population of the half year groups 12.50-13.00 to 17.50-18.00, with reference to physiological age, and demonstrates the important fact that the chronological age groups are not homogeneous.[2]

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[1] A study of the first 813 cases shows the following larger parentage groups.

Birthplace of parents. Both United States, 286; both Germany, 134; both Great Britain, 69; United States, Germany, 70; United States, Great Britain, 61; both Russian, 40; both Austro-Hungarian, 37; scattered, 125.

[2] The tables herein contained have been published in the Psychological Clinic of June, 1907, and in the American Physical Education

TABLE No. 1

Age in Years		Physiological Age Groups.		
		Immature	Maturing	Mature
12.50	13.00	69%	25%	6%
13.00	13.50	55 "	26 "	18 "
13.50	14.00	41 "	28 "	31 "
14.00	14.50	26 "	28 "	46 "
14.50	15.00	16 "	24 "	60 "
15.00	15.50	9 "	20 "	70 "
15.50	16.00	5 "	10 "	85 "
16.00	16.50	2 "	4 "	93 "
16.50	17.00	1 "	4 "	95 "
17.00	17.50	0 "	2 "	98 "
17.50	18.00	0 "	0 "	100 "

From this table it will be seen that up to 17.00-17.50 each age group has its varied constituency of immature and mature.

TABLE No. 2

Age in Years		Average Weight in Kilograms		
		Immature	Maturing	Mature
12.50	13.00	35.2	36.6	(50.8)
13.00	13.50	35.0	37.2	44.3
13.50	14.00	35.4	37.9	43.8
14.00	14.50	35.2	38.6	45.4
14.50	15.00	36.8	39.0	47.2
15.00	15.50	37.9	38.8	47.7
15.50	16.00	36.7	41.8	49.3
16.00	16.50	(40)	38.3	51.6
16.50	17.00	(42.5)	(41.5)	53.5

Review, March, April, May and June, 1908, the latter publication gives a full report of the investigation up to the present time. They are repeated here to show the concrete evidence on which these recommendations are based.

Significance of Physiological Age in Terms of Structure and Function

If the immature differed from the mature in no other way than this particular sign, it would hardly be worth while to segregate these groups. The classification shows, however, that there is a striking physical change in the progress from immaturity to maturity. At characteristic ages, the mature are more than 33% heavier, 10% taller, and 33% stronger than the immature, as indicated by the Tables No. 2, 3, and 4.

From Table 2 it is evident that any statistics which do not include a reference to physiological age are faulty and incomplete in so far as weight and allied features are concerned. Practically all of our statistical work must be viewed in the light of this evidence or disregarded completely.

Table No. 3

Age in Years		Average Height in Centimeters		
		Immature	Maturing	Mature
12.50	13.00	144.0	147.5	150.5
13.00	13.50	144.2	148.7	153.9
13.50	14.00	145.7	150.4	155.9
14.00	14.50	146.6	150.6	157.9
14.50	15.00	147.3	151.7	158.9
15.00	15.50	149.8	151.5	160.7
15.50	16.00	149.8	153.1	162.6
16.00	16.50	151.0	152.4	164.6
16.50	17.00	(153.)	(151.4)	165.4

Table 3 shows the different average heights of these three physiological age groups for each half year. The error of previous statistical work is clear, and the wisdom of recognizing the basis of physiological age in grouping statistical and other records is thoroughly demonstrated.

The following table is of the strength of grip of the right hand taken with a two bar dynamometer.

Table 4 demonstrates again that the immature are radically different from the mature. These three tables present a reiteration of proof of the importance of this classification, upon which it is unnecessary to enlarge.

TABLE No. 4

Age in Years		Strength in Kilograms		
		Immature	Maturing	Mature
12.50	13.00	26.6	28.2	(32.5)
13.00	13.50	26.3	28.1	33.6
13.50	14.00	27.6	30.4	35.2
14.00	14.50	27.3	30.2	37.8
14.50	15.00	29.4	30.8	38.3
15.00	15.50	29.6	31.1	40.1
15.50	16.00	32.5	30.4	42.9
16.00	16.50	31.7	29.6	43.8
16.50	17.00	(27.5)	33.2	48.3

In view of these great physical differences, it is not surprising that there are demonstrable differences in mental ability.

For a compendium of the great mental and social differences between the immature and mature, it is only necessary to refer to G. Stanley Hall's Adolescence and other publications of a similar nature although data are based upon "puberty" and not upon any objective sign their results are beyond question.

So far in our investigation we have obtained records only for high school boys, and have taken success in scholarship as an indication in mental ability. The immature boys at all ages fail to pass the work of any grade much more than those who are mature.

EDUCATION

Our educational plan fails to take any cognizance of the difference between the immature and the mature, and of the vast development of existing and latent abilities, and the accession of new traits which occur during pubescence.

Nevertheless, the trend of our educational endeavor is rapidly changing. That every child entering the kindergarten must proceed regularly through the elementary school, high school and college, is no longer the end and aim of our system. Our practice is being directed towards life as well as towards culture.

It is being recognized that the world provides little room for the scholar, and much room for the mechanic, clerk and merchant, and it is idle to endeavor to transform any growing generation of children into an adult generation of scholars.

Hitherto education has succeeded in rejecting all of the children who fail to keep in line with the lockstep, and it has done its work fatally and well. Only those who could endure a system frankly fitted to subserve the ends of higher education remain in school. Only those are rejected who have failed in scholastic promise and accomplishment. These failures must perforce adopt other than scholastic or professional activities to gain a livelihood.

Dropping out of the lockstep into life work is in one respect a most salutary thing for those unfitted for scholastic development, but our compulsory education law demands that the child be kept in school until he is a certain age, and has completed school work of a certain grade.

This retains the deficient scholar in school long after he has reached maturity, and we find in the lower grammar grades (from 5a to 7a in New York City) thousands of mature children who are, have been, and always will be poor scholars, more out of sympathy with school work than ever before, resistant to all school authority, turbulent, unruly, wasteful and useless burdens merely cumbering the scholastic ground till they become habitual truants, or finally succeed in getting their "working papers." A preliminary investigation shows that in the 5th, 6th, and 7th years in the elementary schools in New York City the poor scholars are on the average 37, 40 and 46% respectively more advanced in maturity than the good scholars. This is quite contrary to the conditions shown in the high schools.

The fundamental fact is wholly disregarded. A child commences to feel his newly-acquired neuro-muscular ability when he matures, his increased mental grasp occasions a change of attitude toward life, and he begins to fit himself for a place in the scheme of adult affairs, and to exert himself for a livelihood and a competence. The instinct for life work, the "earning instinct," is awakened. Those who have been successful scholars will find themselves well advanced in school, and can with assurance of success look forward to a scholastic or professional life;—those who have had poor success as scholars will turn to the world of affairs and strife, of mechanics, industry, or business, for their maintenance. At this time it is essential to the mental and moral health of the boy to engage in something in which he may succeed. Our present system tends to confine him to a dull routine of school failure.

Recommendation I. In the light of the foregoing facts it is recommended that children who mature in the lower grammar grades be given the opportunity to obtain such form of instruction in the elementary school as will directly prepare them for immediately taking a part in active life.

Trade education, business practice, mechanics, etc., in short, industrial education, should be introduced for the purpose of releasing these children from the educational lockstep and affording them an opportunity to become useful citizens. Our great body politic is not essentially scholastic—to train for scholarship alone is undemocratic.

It is at this point the educational system on the inflexible basis of chronological age fails in its functions; it suffers from a lack of rational classification wherever mature and immature children are brought together in the same class. Measured by the Procustean pedagogical system all children in the same grade are relatively equal in scholarship; but our educational control contemplates no cognizance of other and more valuable traits than those related to school success, traits the mature possess in such a marked degree, and which the immature lack. In the upper grammar grades and in the high schools the mature are probably not so much better in *scholarship* than the immature, but they have a whole range of latent abilities applicable to success in life, which, if trained at this point, would lead to personal benefit and industrial efficiency; neglected, they become relatively useless or perverted.

Recommendation II. Where mature and immature children are now brought together in the same class in the elementary or high school, they should be separated into different classes, so that the pedagogical, ethical and social treatment to which they are subjected may be better adapted to their disparate and distinct requirements and abilities.

It is agreed that a further division on the basis of success in scholarship would add to the efficiency of teaching since the present idea of the school function is that it is almost purely scholastic. With the growth of the ideal of practical utility as the function of school work and the fitting of our curriculum to the divergent abilities of these two classes the need of this secondary classification will disappear.

Child Labor

The problem of child labor is clearly reduced to a formula by our fundamental thesis. It is demonstrated that the mature are from thirty to fifty per cent. stronger than the immature, and that pubescence marks the beginning of the period of rapid increase in weight and strength, regardless of the chronological age. On the merits of the case it is clear that the immature who are weak should not be allowed to work, and that the mature who are more fit to work be allowed to engage therein. At present there is a division on the age basis which allows some immature to work and prevents some mature children from working, causing a hardship to both classes. This

is contrary to common sense, and the feeling of the community is justly against such arbitrary method. This is realized with becoming clearness as evidenced by the last report of Commissioner Draper, of the New York State Education Department (Commissioner's Special Thesis; Annual Report 1908; Our Children, Our Schools and our Industries), and by P. Tecumseh Sherman, in his report as Commissioner of Labor, New York State, 1907. The latter states, "there should be added to our law a requirement of a fixed minimum standard of physical development as a condition to granting a certificate of fitness to work in a factory."

Recommendation III. Child labor legislation should be based upon physiological age.

It is agreed that no child found physically or medically defective should be allowed to engage in any but the lightest tasks.

In General

Throughout the presentation of the foregoing evidence, the tendency is to exhibit with some degree of emphasis that it is essential that physiological age be considered as a prime factor. Before and after the ages in which pubescence may be taken as a diagnostic sign there are, without doubt, other signs of physiological age, which will have a significance, and which time and investigation will demonstrate. It is probable that at *all ages* we must consider physiological age first and other factors afterward. While the paramount importance of physiological age is apparent, it is not in any way recommended that we blind our eyes to other secondary bases of classification, such as chronological age, race, social strata, etc.

Recommendation IV. All observations, records and investigations of children, and all treatment of children, whether pedagogical or medical, social or ethical, must regard physiological age as a primary and fundamental basis.

TWO GREEK PROBLEMS[1]

τί δεῖ ποιεῖν καὶ τί δεῖ μὴ ποιῆσαι

By J. E. Harry, Ph. D.

Professor of Greek in the University of Cincinnati

The head master of Harrow declares Greek is doomed. Charles Francis Adams, on the other hand, would prescribe Greek or Latin as a compulsory study to the day of graduation. So, while the whirligig of time is relegating classical Englishmen to the ranks of illiterate modernity, where they can tell

> How many feat has a cattypiller
> And she curls up dede if you try to kill her,

we Americans are being brought around to a consciousness of the fact that the old training is, after all, the one thing needful. Lawyers, doctors, preachers, are pining for the old régime; they are beginning to realize that the world is losing something precious, and they feel that their professions are suffering immensely by the loss. Are not we teachers partly to blame for the decline, and shall we not assist in reviving the interest in Greek?

My experience in teaching beginners is so limited that I hardly feel competent to suggest methods, beyond insisting on a thorough mastery of forms and on an extensive vocabulary, reducing the amount of syntax to be learned to a working minimum. The modicum of success I have met with in teaching modern languages leads me to believe also that better results might be obtained in Greek classes by sending the language to the brain of the pupil through the ear, so that a real familiarity with the "lit language straight from the soul" may be acquired.

Students are not flocking to the Greek rooms in our colleges to-day. Not only are they crowded out, and talked out, in the secondary schools, but even after entering the academic halls they are diverted from Greek courses by a multitude of forces. Not the least of these was the removal of the champagne label A. B. from the bottle containing the genuine liquid, which label was attached forthwith to a vessel holding a mixture of ingredients which was believed both by those who administered

[1]A paper read before the Classical Association of the Middle West and South, at Nashville, Tennessee, April 18, 1908.

and those who quaffed to taste like the nectar of the gods. Soon, however, as the first effect wore off, the illusion was broken, the adulteration perceived. But the harm had already been wrought. The bulk of academic students no longer drank at the Castalian fount, or, to preserve the figure, from the Cliquot cask. Then the demands of the new curricula became so great that both teachers and pupils felt that too many studies meant too great a burden. As a consequence, Greek was summarily thrust aside, into a corner—to survive, or haply perish, unwept and unsung. To those unfortunates who weathered the storm the merciful (or merciless) death-blow was given by the poor pedagogue who handed down coldly to the Aristidean faithful few the cheerless genitives and subjunctives he had learned so well himself in "an antiquated humanist system administered by unimaginative and pedantic people."

> Oh, this false for real,
> This emptiness which feigns solidity!

But to recover, to resurrect! Many things we do, must be left undone, and many, if not most, things we do not, must be done. First of all, the freshman should be taken far into the literature, so that no choice but to elect Greek the second year remains open, his appetite whetted for a more bountiful repast at the more sumptuous banquets of the dramatic poets than was possible on the scraps that fell from the teacher's diminutive Homeric table. To achieve this result no happy-go-lucky three-hour-a-week course will suffice, with intercalated days for the teacher to

> . . . learn us all about jerms
> Mikerobes and basailly and other werms,

and for the disciple

> . . . . . to know
> The upproxymit lenth of a june-Bugs toe.[1]

When I began my work amid new surroundings seven years ago the elective system had just been introduced; Greek was suddenly dropped from the curriculum as a required subject for any degree; and I was requested to arrange my courses in blocks of three or six hours, so that they might fit into the general scheme of things. Six was the number finally selected. Not without trepidation was the first recitation awaited. A solid phalanx of six days of Greek was enough to affright the

[1]Truth is stranger than the poetry of the tot's chronicles. Here are a few samples of spelling from examination papers of advanced students who have enjoyed to the full the benefits of the "advanced" education: roughian, wrotten, rownd, excessable, sausy, seens, laidies, amoung, toutch, comen, exsist, procede, preperation, unmerciously, straitforward, auther, ecstream.

soul of the boldest barbarian. It must be confessed that the number of those who presented themselves for the ordeal was disappointing. But time proved the wisdom of the choice made. The intensive study of Lysias, Herodotus, Homer and Plato by that small band was so fruitful that no other fields offered superior attractions the second year. And a substantial growth in the size of the next freshman class was a direct, though unforeseen, result.

Eighteen years of collegiate work in Greek have taught the lesson, too, that the teacher must be careful in selecting authors and parts of authors to be read, more careful in deciding what he must cast aside, or leap over, and most careful in the gradation of the lessons, both in subject matter and in quantity. This determined, the rest is comparatively easy—read as much as possible. And here a certain assistance is invaluable to the learner. Under the guidance of a competent teacher twice as much ground can be covered as under the old humdrum system of assigning fifty lines for the next day's recitation, letting the pupil dig it out as best he may by the help of a ponderous lexicon and then "hearing the lesson." The danger of this minute study is loss of interest. The business of a teacher is to teach, not to hear lessons. Thumbing the dictionary is a necessary evil, and, like the measles, must be endured once in a lifetime, perhaps; but no language ever was, or ever will be, learned by this method. Each word has its own tint of association, which constantly varies with its environment. In the sentence the word is alive, in the dictionary dead; and the language itself becomes alive as soon as its component parts become familiar to the student as a means of expressing thought. The ear, the eye, the memory, the imagination, the affections, are so many aids to a speedy command of a tongue that seemed to the pupil but a few months before a dead language, a sealed book — savoir n'est rien, imaginer est tout. To acquire the language is the main thing. As Anatole France says in *Sylvestre Bonnard*, "quand on savait une chose, il était indifférent qu'on l'eût apprise d'une façon ou d'une autre."

My assistant reports that one of his boys, a good, healthy specimen of the best American type, recently exclaimed, after a few recitations, in which all the time was not taken up in learning and expounding the mysteries of the conditional sentences or the saving grace of prayer in the optative mood: "Gee! I want to read everything Herodotus ever wrote!" By the lexical-grammatical method a student may learn in time that *in jubeo id* does not signify *in order that;* but he will never arrive at the point where he makes the joyful discovery, even though he be versed in French, German, and Italian, that "Toutes nos langues modernes sont sèches, pauvres et sans

harmonie en comparaison de celles qu' ont parlé nos maîtres, les Grecs." Syntax must not be neglected, its value underestimated (literary appreciation is impossible without a thorough understanding of the forms and the relations of the words in the sentence); but ten minutes are ample in any recitation for the elucidation of either the salient or the unusual syntactical phenomena that demand attention; and it is only the shallow student that is content with a knowledge of the words unaccompanied by a comprehension of the sense. The work need be neither slovenly nor dilettante. Pourtant il faut savoir blâmer et c'est là un devoir rigoureux. A few short crisp questions and answers will make the dark places luminous; time should not be wasted on non-essentials; and, above all, let there be no balking, or flagging of interest. In Lysias the rapid-fire batteries should be brought into action early, to mow down error and vagueness in the student's minds on points of form and syntax. The principal parts of the principal verbs and the essential facts about cases, moods, and tenses, should be thoroughly mastered. This is not only important for a comprehension of Attic Greek, but is in itself the best possible preparation for the work in Herodotus and Homer, which should follow. Careful observation here means more rapid progress in the Ionic and epic literature later. A student should hardly be allowed to read Homer except on the pain of translating him into Attic Greek—not as an aid to the mastery of Attic, but primarily for appreciating Homer. Nothing in our secondary school curriculum in Greek do I deprecate more than this temporary toying with the Iliad. I know that much can be said in favor of Homer as a text-book for the high school pupil; but this remains true: hardly has the distracted student touched the immortal poem (after spending his days and nights in learning a language in which Homer did *not* write) until he is switched back again to the Attic he would fain forget. But in college he should march bravely on, with the aid of Herodotus as a stepping-stone, to enter into and take complete possession of the new field by reading, not three, or six, but twelve books of a work which will leave an everlasting impression on his mind. Lysias, Herodotus, and Homer completed, with a brief course in the lyric poets, particularly Anacreon, the student may take up Plato for the last few months of the freshman year: *Protagoras*, *Lysias*, *Laches*, *Charmides*, *Apology* (and possibly *Crito*) with the narrative portions of the *Phædo*. If he has done this well, no other course in the college curriculum will lure him away from Greek in the sophomore year. He is now ready to approach the supreme creations in literary art of the most gifted branch of the Hellenic race. No dawdling now. That he knows his Greek is assumed. The

Prometheus Bound is not for babes and sucklings. A student who has to pick out laboriously the subject, verb and object has no business to read the sublime poem; the teacher is committing a blunder to put it into his hands. The reader will find that he has new words to learn, but that is a matter of only a few minutes each day, and to the genuine Grecian a real delight. The poet's business is to portray, not to analyze; and the student will never appreciate that portrayal if he resorts to deadening analysis, if he proceeds to pick the poem to pieces for the parts of speech. The teacher must be sagely unanalytic rather than analytically sage. As Jebb says, translation will not help far; still less will analysis, be it ever so skillful and so subtle. A painstaking and acute mind is not the *ne plus ultra* for the comprehension of the *Agamemnon;* the student must understand Æschylus, not logically, but psychologically. If Æschylus is not approached in this spirit, neither pupil nor teacher will understand him—il sera beaucoup lu, beaucoup aimé, peu compris et très commenté. Teachers are too prone to wrangle in tickle points of niceness and entangle themselves in over-wiseness. Furthermore, in the commentary of both professor and editor the poetic element must be kept constantly in mind. Insist upon the English of the Greek idea, and that which was a thing of beauty in the original becomes a bald commonplace. Hence, the teacher must keep himself in the poetic spirit, in the poetic atmosphere. Wer den Dichter will verstehen, muss in Dichters Lande gehen. The view from a college window should be upon "classically educated boys flinging themselves with energy and ardour into modern literature." Just one-fifth of the bulk of the notes in my *Prometheus* is made up of illustrative reading from the poets of Greek and other literatures. This is probably more space than should be devoted to any other play In my *Hippolytus* not more than ten or fifteen per cent. of the commentary could be put into this class. That there would be many opponents of this kind of annotation, I was well aware before I put pen to paper (the reasons therefor we need not now take the trouble to inquire—réfuter des critiques est un vain amour-propre); but that the book has been accorded such a cordial reception has been a great satisfaction. One of the sanest teachers in the Middle West declares (so I am told by the publishers) that the edition includes what we should have and excludes what we should not have in a text-book. Now, as this is the subject of my paper (for the editor's comments are important as well as the teacher's), τί δεῖ γραφειν καὶ τί μή, and as we are practical teachers seeking the best methods to secure what we all agree is the chief end of our profession, I propose to depersonalize myself, so far as I can, and set forth briefly this practical

teacher's views: "For a score of years I have contended that a Greek or Latin poetic masterpiece should either by exclusion or inclusion have regard for the following features: It should have no critical notes on the text except in an appendix, if at all. . . . There should be no grammatical references except in very rare instances. An unusual construction should be elucidated *in situ*. Parallel passages from English authors, and from other authors, too, should be freely drawn upon and given with considerable fullness." Frequently, as experience shows, an apparently trivial parallel from a modern poet will illumine a passage far better than a disquisition by the editor, although the reviewer may fail to discern the appositeness of the quotation. This has been often demonstrated by the students themselves. Translations into idiomatic English of the more difficult phrases, and particularly of the choral odes, are also essential. The student should take up some great masterpiece of the dramatic poets and study it intensively (not necessarily slowly), with the assistance of both teacher's and editor's commentary, and then read either in the classroom or outside, and rapidly, without impedimenta, the best of the rest of the plays. Æschylus, Sophocles, Euripides, and Aristophanes, and a goodly part of Thucydides and Demosthenes, may thus be completed in the sophomore courses, or, at all events, by the end of the junior year. After this acquaintance with the best that has been written by the masters of expression, the student will be eager to take every course in the department, even the special courses in syntax, which, at this point, will not be the least interesting, and assuredly will be far more edifying to the senior than to the freshman.

Once in the classroom and under the spell of Greek, the student will be loth to give it up for other subjects, which he is morally certain will not prove so attractive. Hence the teacher can fight the good fight here with a feeling of comfort. But outside—ἀ πόλεμος ὅδε γ' ὁ πόλεμος—that were a war indeed, a battle hard to brunt. Unsympathetic, and even antagonistic, he may find most of his colleagues (who grow in number as the new professorships are added to the old "narrow" curriculum), the majority of whom, perhaps, brought up outside the pale of Greek culture, worship *βαρβαροι θεοί τινες*. And these Τριβαλλοί the Greek professor must leave comfortably enthroned and seek not to induce his erring brethren to offer prayer and sacrifice and drink-offering to the deities that haunt Olympus' peak. To adopt such a course would be futile, if not fatal. A deity's heart may be turned with prayer and incense and burnt-offering, a faculty's never. Nothing is gained by showing antagonism to the sciolist. The scientist is often the strongest supporter of the classics. And the real value of Greek studies

can be demonstrated only by the product. We must work through our pupils and through our friends outside, the most cultivated of modern minds deeply imbued with a sense of the value of Greek. This, of course, means work for the already overworked professor. But the cause is worthy and the necessity great. If we do not rouse ourselves, the Philistines will be upon us, and another Dark Age imminent. Those who are on the Lord's side must gird up their loins. The darkness of ignorance on things Greek which already enwraps many communities is astounding. The mission of the Greek teacher is to force the rays of intellectual light and spiritual energy of Hellenic culture to penetrate these dark places. Our pupils may not study Greek in the spirit in which it was once studied, namely, to have a proper contempt for those who do not know Greek; but by their acts, looks, words, and steps, they can show the superiority of the Hellenic training, that they have something the others cannot get. Some of our classical teachers believe that the retort courteous to the cavilling critics who contemptuously cry, "Who can read Greek after he gets through college?" is simply this, "Who ever reads Shakspere?" But I confess that I am inclined to make a different reply, less courteous but more true, whenever I hear the declaration that a student who graduates in Greek cannot read Greek—the plain, blunt answer: "It is false." Not only should a pupil who has had three or four years of undergraduate Greek be able to read a comparatively easy author without difficulty, but he should also enjoy that author in the original, even if he should be suddenly stricken with blindness and be obliged to rely on the ear alone for a comprehension of the language; and I believe that a genuine reading knowledge of Greek is acquired by a far greater number of students in the United States to-day than our friends, the enemy, are disposed to set down to our credit. But if the academic "barbarian" cannot be made to see the superiority of Hellenic culture, he may be made to feel it; and the academic Grecian should spare no efforts to give those outside the narrow circle some tangible evidence of the fact that the Greek, as Matthew Arnold has observed, in sense and intellect is supreme, that the most cultivated men of our own time find in Greek art and Greek literature an unsurpassed freshness, charm, and simplicity. Many educated men to-day are as serenely unconscious of the existence of a Greek civilization (and what it means for us) as were the soldiers of Charlemagne; and a glimpse of that ancient world through a chance illustrated lecture on Greek art or an occasional exposition of the beauties of Homer or Æschylus is little short of a revelation. We cannot hope for a complete restoration of Greek to its old place of honor; but we may at least prevent the

whole edifice from tumbling down. A few choice spirits may still be left to leaven the large mass of invaders in the advance of modern life.

A still larger work may be done along the same lines within the precincts of the university itself. Courses in Greek life and literature, open to those who are not acquainted with the language, should be offered in every college and university in the country. Such courses have already been established in many institutions, and with satisfactory results. The Grecian should go even farther and carry his missionary work into the domain of art, so that the general student body (and the teaching body) may feel the refining influence emanating from the Greek room, which should itself be made a thing of beauty and a joy to all who deign to enter. The long-raftered room may have served our purpose very well before science and engineering became the fashion—when students were athirst for the waters of Castaly—but to-day the Attic department, whether *au premier* or *sous les toits*, should surpass all others in beauty and in tasteful arrangement. A professor who keeps a dingy, dirty, cheerless room is little less than a traitor to the cause. The walls should be painted in a color soft in tone, restful to the eye, the furniture in perfect harmony, and to complete the transformation from the usual classroom, a thoroughly Greek atmosphere should be created by the installation of busts and statues and pediments or friezes—always observing καιρός—so that the students themselves may find their surroundings, as well as their books, attractive. Some may object to this on the ground that it is beneath the dignity of an august occupant of a professorial chair to resort to such means. I maintain that it is his duty as an apostle of high culture to adopt these very measures. I will go farther. He should see that the Greek influence extends beyond the classroom, radiates in all directions, so that it will be felt by those who are without the pale of this immediate Hellenic civilization (independent of the ancient they can never be, however unconscious of the fact they may be), so that day by day every member of the institution will be insensibly affected and improved, by the contemplation of, or even by a casual glance at, the objects of art, whether plastic or pictorial, which may be installed, through Greek initiative, in the corridors, reception rooms, auditoriums, and other public places in the principal buildings.

A GENETIC STUDY OF VERACITY

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This study was undertaken with the conviction that the genetic method is perhaps more fruitful than any other as a guide to the formulation of ethical theory and to the solution of the practical problems of moral education. Its aim is to determine what light, if any, can be thrown on the origin of conscious truthfulness and purposed deception by studying the natural inter-relations of living creatures, and to gain from them such hints as may be afforded of the laws which must guide our efforts to aid the child to attain to the highest moral standard of the race in this particular.

For the purposes of this investigation two phases of truth and deception are considered, the first objective, the second, subjective. From the first point of view truth is accurate correspondence between representation and fact. From the second standpoint truth is the conscious intent to reveal fact. Obviously only the second has a moral content, but the fact that the two are mingled in common thought and in popular moral standards, and especially the fact noted by every careful observer of children that at a certain period of life the two are hopelessly entangled in thought and conduct, indicated that in a study of origins, though its chief end was ethical, the first could not be safely ignored. The progress of the study confirmed this belief.

Accordingly, the aim has been to trace from their lowest manifestations the evolution of veracity and deceit, presenting by way of illustration of each stage of development a few of the hundreds of available facts, selecting for the most part those that are most striking or those that are most accessible for confirmation by personal observation.

The study of the rise of veracious representation begins with the consideration of such foreshadowings of truthfulness as appear in the forms, colors, odors, and instinctive activities of the lower forms of animal life in their natural environment.

I. Recognition Signs Between the Sexes

With the complete differentiation of the sexes and the isolation of each in separate individuals, the perpetuation and further

development of life came to depend upon the meeting of the male and the female. Perhaps this, or the meeting for rejuvenescence by conjugation which preceded it, was at first accomplished by chance, but natural selection must soon have secured a more economical method. With the impulse of the sexes to seek each other rose the need of ready recognition. Here is probably the earliest form of the unconscious self-revelation which formed the basis for the evolution of truthfulness.

We have no clear evidence of the means by which recognition is accomplished among the protozoa and other low forms of life, but among the insects we may detect several. Possibly some of the differences of color and marking between the males and females of butterflies and moths of the same species, taken with certain observed likenesses, may facilitate the meeting of the sexes, though investigations seem to have disproved it in certain particular cases. (*Woods Holl Biological Lectures, 1899, p. 163.*)

While there is doubtless further significance, it is possible that the differences in color between the males and females of birds of many species belong in part to this category.

But beyond this simple revelation of sex we may find many forms of the declaration of physiological readiness for procreation. Butterflies usually rest with their wings so closed that only the dull colors of their under surfaces are exposed, but at this time they choose a conspicuous position and display their brightest colors and their peculiar markings. The females of certain moths attract the males from long distances by odors which are slightly, if at all, perceptible to human olfactory organs. (Alfred Goldsborough Mayer, Woods Holl Biological Lectures, 1899, pp. 122-123.) By confining out of doors a virgin female of *Callosamia Promethia*, a large nocturnal species which rarely attracts attention under other circumstances, the writer has taken one hundred and eleven males during the daylight hours of one and one-half days. Most of them must have come from somewhat distant points. One was observed approaching the spot against a slight breeze, wandering very little from the shortest route though it was still more than twenty rods distant. After fertilization this attractive power of the female nearly or quite ceases.

The light of fireflies and other glow-insects further illustrates this revelation of fitness for the most important function of their lives. Similar in purpose are the strident notes of other insects, the caterwauling of the feline tribe, the lowing of cows, and many similar manifestations.

II. Warning Colors and Signs

Certain insects and reptiles have acquired tastes or odors

which are repugnant to predaceous species, and have thus greatly increased their chances of survival in the struggle for life. It would manifestly be of great advantage to any animal that was unfit for food to advertise that fact, and thus escape the danger of experimental tasting. A very large number of cases in which this is done are known to science.

Most caterpillars closely resemble in color and markings the foliage upon which they feed, but some nauseous species are marked in conspicuous patterns with the most brilliant colors, which are designed "to assist in the education of their enemies." Among butterflies, certain species of the genus *Papilio* are so protected. A very familiar example is the larva of *Papilio asterias*, the common "celery worm," which is found in gardens feeding upon the plants of celery, parsley and carrots. It is marked with conspicuous bands of yellow and black, and when annoyed thrusts out a scent organ which diffuses a disagreeable odor. Similar warning colors are common among the lepidoptera and other orders of insects.

Frogs are regarded as delicacies by creatures of many kinds, and as a class are well protected by inconspicuous colors—greens and browns that blend with the grass and mud of their accustomed haunts; but one Nicarauguan species advertises its inedible qualities by its gorgeous dress of red and blue. (Thos. Belt, *The Naturalist in Nicaraugua*, page 321.)

Certain species which have acquired aggressive means of defense practice economy in their use and avoid the dangers of conflict by announcing the dangers that the enemy must face. "The Gila monster (*Heloderma*), the only poisonous lizard, differs from most other lizards in being strikingly patterned with black and brown." (Jordan & Kellogg, *Evolution and Animal Life.*)

Such is the significance of the yellow spots and stripes of the bees and hornets, and the black, red, and yellow bands of the poisonous coral snakes (*Elaps*) of the American tropics. Other venomous reptiles have various warning signs, among which may be mentioned as familiar examples the rattle of the rattlesnake and the expanded hood of the cobra.

Among mammals we find a few similar examples. The skunk, which in lieu of other means of defense discharges a fetid fluid upon its assailant, never manifests fear of man or dog. It is frequently encountered in the woods or about the farm buildings, and on such occasions is likely to approach the observer, but never takes flight. When the presence of an enemy is realized the long and bushy tail, which is chiefly white in color although the body may be wholly black, is elevated to a vertical position. Farmer boys and wild animals alike know that it is a danger signal, and the creature is very rarely molested.

A part of the economic value of the growling of the dog, the spitting of the cat, the pawing of the bull, and other characteristic symptoms of anger lies in the fact that they faithfully represent the emotional states of the creatures, and by awakening fear remove the necessity for actual conflict.

III. Recognition Marks of the Species

Aside from the necessity for the meeting of the sexes, there are several occasions upon which there is great advantage in the immediate recognition of the individual by another of the same species. This is especially important in the case of those species which care for their relatively helpless or unsophisticated young.

The colors of the meadow lark (*Sturnella magna*) harmonize remarkably with its usual environment when at rest or feeding upon the ground, but when it takes flight it displays several white feathers upon each side of the tail. These prominent markings are helpful as guides to keep the young from scattering in flight and thus falling an easy prey to their enemies. The same form of recognition marks appear in the common slate-colored snow bird (*Junco Hiemalis*) and in many sparrows. Countless others might be enumerated among the birds, and many among mammals.

The common hare is almost indistinguishable when at rest or feeding in its haunts, but when it takes flight nothing could be more conspicuous than the upturned white tail by which it guides the young to the burrow. Precisely the same provision appears in the case of the Virginia deer, while a black spot serves the same purpose in the black-tailed deer. The common weasel is brown in summer and white in winter, but the tip of its tail is always black.

To gregarious animals safety is with the pack; isolation means danger. Accordingly we find many markings among these which are manifestly to enable the animal to recognize its kind. Wallace, in *Darwinism*, gives many illustrations, drawn chiefly from the deer, antelope and related families.

IV. Call Notes of Birds and Mammals

Similar in significance to the phenomena just mentioned, but involving a much larger mental content, are the sounds and signs by which the parent summons the young and, among gregarious animals, the individual calls the social group to give information of food. Very familiar examples are the clucking and the picking at food of both the hen and the cock. With these belong certain cries of animals that rally the band to the pursuit of prey, like the baying of hounds and the howling of wolves.

V. Alarm Cries and Danger Signals

These are very common. No country-bred lad could forget the note uttered by the chick when it is alarmed, or fail to associate it with the response of the hen. Every one is familiar with the piercing alarm cry of the robin, and the promptness with which it brings the absent mate, and often others of the species, to the defense of the threatened nest or young. In almost every species of birds these alarm notes are now recognized and recorded by students of bird-life.

Among mammals we find similar manifestations of danger to the offspring, though they are not always vocal, as in the case of the warning stamp of the rabbit and hare, and a like sign among sheep and chamois. Among gregarious animals this custom of announcing danger has been extended to include all who are in the same social group. It is usual for the bird that is alarmed to give the signal which alarms the flock. It is a familiar fact that when crows are feeding upon the ground one or two of the flock are almost invariably found perched upon a tree or other eminence, ready to warn the flock of approaching danger.

Rocky Mountain sheep "post sentinels wherever they are feeding or resting who watch for and give warning of the approach of danger. . . . . Prairie dogs tell each other by shrill cries of the approach of danger." (Jordan & Kellogg, *Animal Life*, page 166.) Darwin says in *The Descent of Man* that "many birds and some mammals post sentinels, which in case of seals are said generally to be the females. The leader of a troop of monkeys acts as the sentinel and utters cries expressive both of danger and of safety." If the phrase "post sentinels" in these two quotations is too anthropomorphic there is still no doubt that the instinctive conduct of the animals serves the end indicated by the words.

The alarm cries of birds are frequently effective in summoning representatives of other species than their own. I have frequently seen birds of another species respond to the alarm note of the robin. Several times during one summer I saw birds of five species collected within a few seconds by the cries of one bird that had discovered an owl—a common enemy of all.

VI. Challenges to Combat

Among those species in which there is a combat among the males for the possession of the female there is often seeking of the contest rather than attempt to avoid it. The male challenges his rivals. So must we often interpret the crowing of the cock. Edwin Sandys says of the ruffed grouse, "He chooses some spot which suits his fancy, and from it sends

notice to all males and females within hearing that he is ready for engagements—either way, love or war, or both. He usually gets both. The challenge is not a vocal effort, but the well known drumming, a most peculiar sound." (*Upland Game Birds*, page 174.) The hunter calls the moose to his doom by counterfeiting its similar challenge to rival bulls.

VII. Honey Signs and Guides in Flowers.

Not only do we find faithful, though unconscious, revelation of fact among creatures of the same kind, and between different species that have a common interest, but even between organisms as remote in their relationships as plants and animals. This finds illustration in those plants that depend upon insects to secure cross-fertilization. Says Darwin, "Not only do the bright colors of flowers serve to attract insects, but dark colored streaks and marks are often present, which Sprengel long ago maintained served as guides to the nectary." (*Cross and Self-Fertilization in the Vegetable Kingdom*, page 372.) He states at length his reasons for the same conclusions. Flowers that are fertilized by night-flying insects are usually white that their invitation may be the more readily conveyed in the darkness, and the store of honey is further advertised by odor in nearly every case. Darwin demonstrated that this is the real significance of the perfume by covering the plants from sight with muslin cloth, and observing the insects still attracted. Some of our most fragrant flowers, for example the mignonette, have very inconspicuous blossoms: dependence upon only one mode of announcing its sweets has led to a high development of fragrance.

While accurate representation of fact is seen to play a large part in the lives of creatures below man in the scale of development, there are other phenomena which require consideration for the purposes of this study. Out of the necessity for co-operation truthfulness, in the sense in which it appears among these creatures, has been born; but the competitive struggle for existence has been another prominent factor in the shaping of life, and in it conscious or unconscious deception has been one of the means of survival. Its beginnings are found low in the scale of life. Perhaps the earliest and most simple of the familiar forms is

I. General Protective Coloring

The remarkable resemblance in color between many forms of animal life and the environments which they habitually frequent is familiar to the most careless observer, and is obviously a means of misleading their enemies. The colors and markings of the grouse, quail, and hare are so nearly like those of the

fallen leaves, dried grasses and decaying stumps that hunters and predaceous animals, whose whole attention is centred on their pursuit, rarely see them until motion reveals them in flight. The sportsman may see snipe or plover fall at his shot, and may carefully mark the place, but so perfect is their likeness in color and marking to the general effect of the marsh grass and the stubble that he often finds it impossible to retrieve them when unaided by the keen scent of his dog.

Butterflies, which are especially exposed to danger when taking their food, rival in brilliancy the flowers upon which they rest. Caterpillars which feed upon leaves are usually green, except in case of those that feed at night: these usually resemble the bark upon which they rest during the day.

The backs of fishes resemble in color the weeds among which they feed, as in case of the vertical bands of the perch and reticulated markings of the pickerel; or, as in case of the trout and the catfish, the pebbly or muddy bottoms of the streams or ponds which they inhabit. In both the latter cases, and commonly in species that feed near the surface, the bellies are white that they may be inconspicuous as seen from below. Species that inhabit the ocean at depths where darkness continually prevails are violet colored above and below.

The form of the treetoad is as completely lost upon the mottled surface of the tree trunk or the lichen-covered fence rail as is that of the horned toad in the desert sand.

Not only are the bear, the fox, the hare, the ermine, the owl, the ptarmigan, and other arctic species white, but in those species whose habitat reaches the temperate zone there is a change of color during the summer months so that harmony with the environment is maintained when the ground is not covered with snow.

It has many times been observed that the black trout of muddy streams, when placed in brooks, soon duplicate the appearance of the bottoms in the lighter and broken markings of their backs.

The chameleon and some common insects possess the power to almost immediately assume the color of the surface upon which they rest. In this change there is a psychic element, for it is mediated in sight, It has been shown by experiment that it does not occur in any animal that is blind. Some fishes, notably the grass porgy, show the same quick response to environment in changed color.

II. Special Protective Resemblances

These are especially common among insects. A common example is the "walking stick" (*Diapheromena*) which exactly counterfeits the appearance of a lifeless twig. Another exam-

ple from the same family is the green leaf insect (*Phyllium*) of South America. It "is of a bright green color with broad, leaf-like wings and body, with markings which imitate the leaf veins, and small, irregular yellowish spots which mimic decaying, or stained, or fungus covered spots in the leaf." (*Jordan and Kellogg, Animal Life, page 210.*) Still more remarkable is a large butterfly (*Kallima*) of the East Indies. "The upper sides of the wings are dark, with purplish and orange markings, not at all resembling a dead leaf. But the butterflies when at rest hold their wings together over the back, so that only the under sides of the wings are exposed. The under sides of Kallima's wings are exactly the color of a dead and dried leaf, and the wings are so held that all combine to mimic with extraordinary fidelity a dead leaf still attached to the twig by a short pedicle or leaf stalk imitated by a short tail on the hind wings, and showing midrib, oblique veins, and, most remarkable of all, two apparent holes, like those made in leaves by insects, but in the butterfly imitated by two small, circular spots free from scales and hence clear and transparent. With the head and feelers concealed beneath the wings, it makes the resemblance wonderfully exact." (*Alfred Russell Wallace, The Malay Archipelago, Vol. I, page 203.*)

Many larvæ of geometrid moths bear a wonderful resemblance to little twigs of the trees upon which they feed. In some species certain irregular humps and markings exactly resemble the scars left by fallen leaves. When at rest they stand out obliquely and stiffly from the twig, and are provided with special adaptations of the muscular system which enable them to keep this position for hours. Jenner Weir says of one of these species, "After being thirty years an entomologist I was deceived myself, and took out my pruning scissors to cut from a plum tree a spur which I thought I had overlooked. This turned out to be the larvæ of a geometer two inches long. I showed it to several members of my family, and defined a space of four inches in which it was to be seen, but none of them could perceive that it was a caterpillar." (*Nature, Vol. 3, page 166. Quoted by Wallace.*)

The value of the protective coloring of nearly all birds and mammals is greatly increased, when the animal is frightened, by the instinct which Ernest Thompson-Seton has called "freezing." At the first hint of danger the creature assumes a posture which suggests some common feature of the environment and remains motionless until discovery is imminent, when flight is resorted to as the second best means of escape.

III. Concealment by Adventitious Means

The larvæ of some of the lepidoptera make cases for them-

selves of the foliage upon which they feed. The same means of concealment is used by the clothes moth. The cocoons of some moths are concealed among the leaves of their food plants.

The larva of the caddis-fly makes for purposes of concealment as well as protection a case of sand, vegetable fragments, etc. Many mollusks accumulate sand upon the surfaces of their shells, and some sea urchins completely cover themselves with pebbles, shells, etc.

Certain crabs (*Stenorynchus*, *Inachus*, *Pisa*, *Maia*, *etc.*) tear pieces of seaweed from the plants and, after softening the ends by chewing them, deliberately fasten them among the peculiar curved hairs that cover their bodies. Sea anemones, sponges, etc., are collected and used in the same way by other species. (*The Colours of Animals*, *Edward Bagnall Poulton*, *page 78.*)

The ruby-throated humming bird, which saddles its tiny nest upon a branch, covers it carefully with lichens, so that it presents the exact appearance of a knot.

IV. Mimicry of Protected Species

Mention has been made of the warning marks by which certain inedible or aggressive species of insects and reptiles are recognized, and which secure them freedom from attack. Many edible and harmless species have obtained like immunity for themselves by mimicking these warning signs.

One of the most common large butterflies of the United States is the Monarch (*Anosia plexippus*). The prevailing color is orange-brown with black veinings. This is an inedible species. A genus of edible butterflies (*Basilarchia*) is made up, with two exceptions, of species that are black and white, and have the colors disposed in large masses. One of these exceptional forms is orange-brown with veinings of black, and is usually mistaken for the inedible Monarch by the untrained human observer as well as by its enemies among the birds. Another similar case of mimicry occurs in the same genus.

In a preceding section reference was made to the female of the large moth *Callosamia Promethia*, which emits an odor by which the males are attracted. Like both males and females of other related species of moths, the female Promethia flies only at night; but the males of the species seek the females by day. They are thus exposed to greatly multiplied dangers, particularly from the attacks of birds. Hence they have departed largely, both in form and color, from the type of the species in mimicry of an inedible butterfly of the genus Papilio.[1]

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[1] This statement is based upon unpublished investigations of the writer.

Probably the most remarkable case of protective mimicry known is that of a South African butterfly (*Papilio cenea—later called P. merope*), an account of which is found in the *Linnean Society Transactions, Vol. 26, pages 497-532*, and a quite full description with colored plates illustrating the various forms of mimicry in Poulton's *The Colours of Animals*. In his summary of the facts Mr. Poulton says, "Three well known species of *Danais* occur in Africa, each of which is mimicked by a special variety of the female of Papilio merope; two of the *Danaidae* present two varieties in the region over which they are accompanied by *P. merope*, and some of the females of the latter undergo corresponding changes; intermediate varieties occur, and also connect one of these forms with a fourth variety of the female." That is, in this species the female is always totally different from the male in appearance, and in different forms mimics three species and four varieties of another genus. In a very closely related species found in Madagascar the female is almost exactly like the male, these changes having been brought about in *merope* by the value of the protective resemblance.

Among insects protective mimicry has been carried to great lengths, there being many cases in which it occurs between species of different orders. Bees and wasps, having gained immunity by their venomous stings, have been mimicked in many cases. Certain butterflies and moths have discarded the wing scales, which are so characteristic as to have given the name to the order to which they belong, and have developed other resemblances to bees and wasps. Certain flies very closely resemble bees in color and form, and even in the buzzing sound of their wings and in movements which counterfeit the attempt to use a sting. Certain spiders dwell among ants which are inedible. They not only resemble them very closely in form and color, but have developed ant-like movements totally different from those of other spiders, and turn the seeming disadvantage of an extra pair of legs to account by carrying the first pair raised from the ground in such a position as to mimic the antennæ of the ants. Several grasshoppers closely imitate inedible beetles in appearance. Hudson mentions (*A Naturalist in La Plata, page 127*) a grasshopper that closely resembles a wasp and imitates the movements of stinging. A beetle found in Borneo has departed from the type of its order to a very extreme extent that it may gain immunity through a remarkable resemblance to a conspicuously marked wasp which is found in the same localities. Wallace in *Darwinism* (*pages 233-267*) gives many similar illustrations.

Mimicry of protected forms is not common among vertebrates, but a few remarkable instances are known. Among these are

several harmless snakes which mimic the brilliantly colored venomous coral snakes previously mentioned. Wallace says that snakes of three genera belonging to other families mimic various species of *Elaps*, two harmless species imitating the same venomous form. In some cases the likeness is so great it is with difficulty that the species can be separated. Many harmless snakes flatten the head, hiss and make aggressive movements when in danger.

Among birds there are a few clear cases of mimicry. One of the less striking is that of the cuckoos, very weak and defenceless birds, which in color and markings suggest the sparrow hawks. In case of one species the likeness is so great that it has given rise to the myth that they are hawks in disguise.

More remarkable is the resemblance between certain weak and timid orioles of the Malay archipelago and the powerful and aggressive friar birds (*Trophidorynchus*) which are well armed with beak and claws and are able to repel hawks. Says Wallace, "In each of the great islands of the Austro-Malayan region there is a distinct species of *Trophidorynchus*, and there is always along with it an oriole that exactly mimics it." (*Darwinism*, page 263.) The resemblance between these birds of widely different families has several times deceived naturalists when the preserved specimens were before them, and one of these orioles is actually described and figured in a great French book of travel as belonging to the imitated genus. Forbes says that he was puzzled by the peculiar behavior of certain individuals in flocks of honey-eaters which he observed. Later he discovered that here was another similar case of protective mimicry. He says, "Only after the closest comparison of the dead birds in my hands was the enigma solved by my perceiving that the birds were of distinct species." He adds, "When my collection was laid out for description by Dr. Sclater, the Oriole and the Honey-eater's dress were so strikingly similar that the sharp eye of that distinguished Ornithologist was deceived, and the two birds were described by him as the same species." (*A Naturalist's Wanderings in the Eastern Archipelago, page 337.*)

Closely allied to protective mimicry is the use of terrifying appearance of a more general nature. Among insects there are many cases in which form, markings, or movements suggest a likeness to a venomous reptile or gave a generally formidable appearance. The larvæ of certain sphinx moths bear upon the tail a horn-like appendage which is popularly supposed to be a sting. In my boyhood I was warned many times that the sting of one of these common larvæ was fatal. The popular belief that this appendage is an organ of offence

is strengthened by the way in which this part of the body is jerked from side to side when the insect is disturbed. Several other large caterpillars, when alarmed, retract the head and the first few segments of the body within the adjoining rings. These are thus swollen, and the large eye-like spots on them give the perfectly harmless creature the appearance of a serpent. Bates tells of receiving a severe fright the first time that be attempted to capture one of these caterpillars, and Poulton describes experiments which demonstrated the effectiveness of the device in deterring lizards from attacking them. G. Marshall tells of two baboons that were greatly terrified by a sphinx-moth larvæ, some seven inches in length, which has large blue, eye-like spots near the tail. He says, "Their fright was ludicrous to see; with loud cries they jumped aside and clambered up the pole as fast as they could go, into their box, where they sat peering over the edge watching the uncanny object below." (Quotedby *Jordan & Kellogg*, *Evolution and Animal Life*, pages 418, 419.)

V. Trickery and Cunning

Under this head may be grouped devices by which the fox escapes the hound and obtains his prey, and similar habits of the raccoon, the monkey, and perhaps other animals. The devices of the fox may be taken as typical of this group. He frequently attempts to elude the hounds by doubling or turning back upon his trail, and also by running in flowing water which takes away his scent. He is also credited with running among sheep in the fields that the trail may be obscured, and with running for some distance upon the top of a stone wall. Many more elaborate devices for concealment and deception which are related by the "nature fakirs" are hardly worthy of credence without better substantiation.

Many animals ranging from insects to mammals seem to simulate death in time of danger. In case of some insects simply dropping to the ground and remaining motionless enables the creature to escape notice, but among the higher animals the phenomenon is certainly interpreted as death by their enemies, and is effective for the preservation of the creature for that reason. Hudson (*The Naturalist in La Plata*, page 20) says of the fox, "The deception is so well carried out that dogs are constantly taken in by it, and no one not previously acquainted with this clever trickery of nature but would at once pronounce the creature dead."

Different writers ascribe this instinct to insects, spiders, reptiles, and fishes. Hudson mentions seven species of birds and mammals that manifest it. The most familiar examples among mammals are the opossum, the fox and the red squirrel. The

trait is attributed to monkeys, but I have found no definite data.

Bateson is "sure that the animal does not lose consciousness," but there is no agreement as to this point, and the psychic elements involved in case of the higher animals have not been fully determined. A full solution of the problem would not be likely to add anything to the value of this study, for if intelligence is involved there is no probability that there is any conscious deception.

VI. Concealing or Alluring Resemblances for Aggressive Purposes

In many cases the same provisions that are effective for the concealment of a creature from its enemies also favor the approach of its prey as it lies in wait. For example, a spider while it seeks the insects upon which it feeds sits motionless upon a branch and resembles a woody knot. Another spider under similar circumstances sits at the base of a leaf and has the exact appearance of an axillary bud. (Henry W. Bates, *The Naturalist on the River Amazon*, page 54.) Such illustrations might be multiplied to a great extent, but it is difficult in these cases to determine whether the resemblance is aggressive or protective in its significance. In others, however, it is clearly alluring in its nature.

H. O. Forbes (*A Naturalist's Wanderings in the Eastern Archipelago*, page 63) gives an interesting account of a spider which, as it rests upon a leaf, exactly resembles the excretum of a bird, which is especially attractive to certain butterflies. The spider, when displaying the alluring resemblance, lies upon its back with the feet ready to seize the insect upon its approach. Another naturalist tells how he was deceived by this appearance until he touched the creature with his finger.

"A whole family of spiders, which live in flower cups lying in wait for insects, are white and pink and parti-colored, resembling the markings of the special flowers frequented by them. This is, of course, a special resemblance not so much for protection as for aggression; the insects coming to visit the flowers are unable to distinguish the spiders and fall an easy prey to them. (Jordan & Kellogg, *Evolution and Animal Life*, page 415.)

An Indian *Mantis* has flattened legs of a pink color which are so disposed in relation to the body that the whole insect when at rest has the appearance of a flower. It feeds upon the insects that are attracted by this resemblance.

The group of fishes called the anglers possess one or more slender filaments which dangle before the mouth a natural bait resembling a wriggling worm. The small fishes that are at-

tracted in this way form the food of the angler. In one closely allied deep-sea species the bait is phosphorescent, making it especially attractive in the semi-darkness of the ocean's bottom.

A species of lizard (*Phrynocephalus mystaceus*) in "its general surface resembles the sand on which it is found, while the fold of skin at each angle of the mouth is of a red color, and is produced into a flower-like shape exactly resembling a little red flower that grows in the sand. Insects, attracted by what they believe to be flowers, approach the mouth of the lizard and are, of course, captured." (*Edward Bagnall Poulton, The Colours of Animals*, page 73.)

There has been attempt in recent years to disprove the theories of protective coloration, warning colors, and protective mimicry, which have afforded many illustrations in the foregoing pages, but without success. F. E. Beddard has reviewed the work of Weismann, Jenner Weir, Poulton, Butler, Bates, and others (*Animal Coloration*, pages 83-253), and while certain supposed cases of warning colors and protective mimicry seem to be weakened if not discredited, the general conclusions are affirmed so far as they affect the purpose of this study. Jordan & Kellogg in Evolution and Animal Life (1907) discuss the attitudes of different scientists toward the theories, and state that the trend of opinion is decidedly in favor of them. They say (page 402) that most naturalists "believe that this kind of usefulness is real, and that it is the principal clew to the chief significance of color and pattern."

VII. Devices for the Preservation of the Young

Some birds, for example the bobolink, when leaving the nest always run for some distance upon the ground before taking flight, that their enemies may be misled as to its location. The peculiar instinct of the great crested flycatcher, which constructs its nest in the hollow of a tree and invariably introduces one or more cast skins of snakes into its structure, is best explained as affording protection to the eggs and nestlings, which are especially likely to be attacked by squirrels.

Among our common birds the Virginia quail, the ruffed grouse, the Savannah bunting, the oven bird, and a large number of others lead enemies away from the vicinity of the nest or callow young by feigning a broken wing and fluttering along the ground just out of reach of the pursuer. The same instinctive action is reported of many foreign species as well.

Exceptional Cases

In closing the account of these phenomena it should be observed that the classification on the basis on the ends served is largely artificial, and that in nature the dividing lines are not

clearly marked in many cases. All the apparent exceptions and blendings of type are of interest, and many are suggestive in connection with the present inquiry.

In many species of sparrows there seem to be no recognition marks of the species that are apparent in color or marking. Even the ornithologist must depend upon the relative length of wing feathers and similar obscure signs which can only be determined when the bird is in the hand if he would decide to which species the individual belongs. But the habits of these birds are so similar that they are found migrating and feeding in company and heeding each other's alarm notes as if they were of one species. It is only when mating time comes that it is necessary that they should be clearly distinguished from one another. It is probable that the tendency to seek certain environments, peculiar call notes, and perhaps odors, furnish the recognition marks of species and sex.

It has already been pointed out that resemblance to the environment may be at the same time protective and aggressive. It is also true that the same marking may be at one time veracious and at another deceptive. An interesting illustration is found in the case of the willow ptarmigan. The tail of this bird is always black, and serves as a very effective recognition mark of the species as it is conspicuous in flight. In winter the bird is entirely white except for this marking. Strange as it may seem at first thought, it now serves for purposes of protection. Edwin Sandys says (*Upland Game Birds, page 223*), "Every projection above clean snow is apt to cause a more or less decided shadow, and this causes a darker spot. This the black tail of the crouching ptarmigan so closely imitates that the intelligent observer cannot fail to detect Nature's purpose in the one peculiar mark."

Summary and Interpretation of the Preceding Facts

An attempt to summarize the facts that have been presented, to determine their relations to the development of truthfulness and veracity, and to formulate some general conclusions based upon them yields the following results.

(1) The earliest forms of the revelation of self seem to have been made by appeal to the primitive tactile sense, and later by means of odor, form, color, attitude, gesture, and mechanical and vocal sound. Following simple response of the material organism to natural selection in the matters of form and color, there arose special adaptations of the muscular system with nervous equipment for their control, tendencies to utilize customary movements for this special purpose, the development of special organs of expression, and finally codes of signs with highly developed instincts governing their use. In case

of some of the higher animals intelligence may possibly be involved, but even then there is rather a selection of the most economical means to accomplish an end than any purposed or conscious deception. Truth or falsehood occur here only in the objective sense of correspondence or lack of correspondence between fact and representation. *In the prefigurings of deceit and veracity in life below man's we can detect no moral element.*

The most that we can gain, then, from a study of these phenomena is an estimate of the parts which unconscious ingenuousness and misrepresentation have played in the processes which have prepared the way for the psychic life and the social relations of man, and a knowledge of the embryonic stages of the development of ethical truthfulness and falsehood.

Seeking to ascertain the attitude of nature toward truth and falsehood in this objective sense we find that

(2) The nascent forms of veracity which have been enumerated had their origin in the necessity for co-operation. They arose very early in connection with procreation, appeared next in the relation of parents with offspring, and later in connection with the relation of adults of the same species, and finally of different species, with each other. In the cases studied it is invariably associated with the essential functions of life, and after life has risen above the primitive stages some of these functions could not be performed without it. *Veracity is universal in certain especially important relations, and is of fundamental importance in the life of the individual and in the cosmic process.*

(3) Misrepresentation occurs as an aid to the escape from enemies, as an aid in obtaining food, and as a means of protection for the young. Apparently it had its origin later than the primitive forms of self-revelation. In every case it is self-preservation or the preservation of the species that gives occasion for the deception, and in none of these cases does it seem to be absolutely essential to this end, though in many it plays a very important part. *Deceit makes its appearance only as an aid to the preservation of life, is occasional in occurrence, and has a secondary rather than a primary importance in the life history of the animal.*

(4) A comparison of the readily accessible accounts of the various forms of instinctive veracious and deceptive self-expression in animals confirms the general principles that might be deduced from the laws of natural selection. These are (a) that where the revelation of any fact gains the aid of another organism in any important function of life, veracity is the rule: (b) where the revelation of any fact increases the danger from enemies or the difficulty of obtaining food, it is often concealed: and (c) where knowledge of the fact results in neither benefit

nor injury there seems to be neither announcement nor concealment. It is interesting to note that an examination of the phenomena as recorded seems to yield no illustration of the practice of deceit between individuals of the same species. Even where competition is strong there seems to be no concealment of fact to avoid conflict, but rather a seeking of the struggle which will result in the elimination of the weak. The benefits of co-operation, made possible by veracity, so far overbalance those that might result from the lack of ingenuousness in the species that misrepresentation seems to have no place. *Nature's rule is, deception for enemies, truth for friends; and the rule holds good between those who are friends by racial inheritance, even where there is direct conflict of interest in the case of particular individuals.*

(5) Reviewing the data once more from still another point of view, it appears that deception is much more common among the less virile and aggressive forms of life. The larger number of cases are found among insects, and after this group among the weaker reptiles and birds. Among insects it rarely if ever appears among forms like the larger hard-shelled beetles or the sting-armed wasps and bees. It is in the rabbit, the squirrel and the fox rather than the ox, the wolf, the bear or the lion that it finds its highest development among mammals. Very commonly it is associated with fear in its mission of self-preservation, and when it takes an aggressive form as an aid in obtaining food, it is usually in one of the weaker forms of a group. *In the economy of nature, deception is the weapon of the weak.*

(6) Closely related to the preceding, but even more significant in its moral implications, is the fact that with the development of intelligence and the higher instinct-feelings the general tendency is away from deception and toward larger revelation of fact. And this is not inconsistent with the fact that the discovery of the power to deceive may have done much to sharpen the dull wits of our primitive ancestors. It is at best but a stepping-stone to the first stages of the upward-leading path of intellectual development.

Sutherland (*Origin and Growth of the Moral Instinct*, Vol. I, pages 28, 29) makes a distinction among the characters which favor survival of the individual or the species on the basis of their intrinsic and permanent value as aids to development to a higher type. In the one case "it is only a trick, a mere accident which nevertheless is potent for safety;" in the other there is "a step, however small, on the path to a nobler type." "Dologeny . . . is the process of breeding from the craftiest or most tricky of the race." "Aristogeny . . . is the process of breeding always from the best." The devices of the first type are "but side tracks leading to blind ends;

while the other is the high road to development." While he describes "Aristogeny" as referring to completeness of nerve development, it is evident that a trait which tends toward more aggressive or active triumphs over the difficulties of an unfavorable environment, and toward greater co-operation of individuals, belongs in the same class.

The creatures in whom deception has reached its highest development do seem to be for the most part those which have departed far from the line of ascent which has produced man. *The tendency of evolution seems to be toward the elimination of deception as the scale of intellectual and emotional development rises.*

There still remain for consideration two very important groups of psychic activities in animals which have relation to the subject of this study, but which do not readily fall under the same categories as the preceding phenomena. The first of these includes the various forms of

Self-deception in Play

This finds illustration in the hunting and fightiug plays of the carnivora and the playful combats and games of flight and pursuit of some of the herbivora. The playful butting of calves, lambs and kids; the tussling, wrestling, and biting of foxes, dogs and monkeys; the pursuits, seizing, and scratching of kittens and young raccoons, and the playful attacks of many of these upon their human masters are familiar examples of these activities. As Groos indicates, there is probably no conscious self-deception in the case of the younger animals, but when their powers of combat are well matured and there has been experience of serious struggle, and still the playmate is never harmed except in case of unusual excitement, it would seem that this self-restraint must imply some realization that the experience is a sham.

In case of the hunting plays there seems to be no reason to doubt that there is conscious self-deception. The cat, having killed the mouse, continues the play by tossing it in the air and springing upon it as it falls to the ground, turning from it and walking away, only to creep back and seize it with every appearance of cunning and stealth. Consciously or unconsciously both the cat and the dog often make the ball or other inanimate object represent the prey which they commonly pursue. At times the creature may be actually misled by a swiftly moving object and suppose it to be an animal, but in such cases the appearance of disappointment when the mistake is discovered is very noticeable. Even when play with the object is indulged in immediately afterward the change in the mental attitude is clearly apparent.

In all these hunting and fighting plays the movements are those of the species when engaged in the serious activity. The kitten springs and seizes with the claws; the puppy runs and seizes with the mouth. In every case the characteristic movements of the adult appear in the play of the young. Whatever theory of play is adopted, no one would question the value of these activities to the creatures which engage in them. They seem to be in every case a means of training for the serious occupations of life. However much of recapitulation may be involved in the origin of these instinctive self-deceptions as studied from the standpoint of the history of the race, their significance from the standpoint of the life history of the individual clearly seems to be anticipatory in large measure. *Self-deception in play is educative in effect.*

The last group of phenomena to be considered are those which reveal

Veracity and Deception in Domesticated Animals

This field is an especially difficult one for several reasons. First of all, the amount of data which has any scientific value is exceedingly small; most of the stories of domestic animals now accessible having been recorded by those who have manifestly attributed human motives and human psychic processes to them. From such a story it is usually impossible for the psychologist to extract the element of fact. Again, we have as yet little exact knowledge to aid us in fully interpreting the conduct of animals under the very abnormal conditions of domestication. The account of the effects of habitual intimate association with man upon the psychic life of the lower animals, both as regards the species and the individual, will form one of the most interesting and perhaps one of the most illuminating chapters in psychology, but so far as the writer knows it is hardly begun as yet.

That the modifications due to domestication are very great is apparent in several ways. (a) Because man has provided food, controlled breeding, afforded shelter, and in fact usurped the place of nature in relation to most of the crises of their lives, the hereditary instincts of the species are rapidly broken down. A familiar evidence of this is found in the fact that strange sympathies develop and unusual fellowships are formed, sometimes between creatures that are deadly enemies in a state of nature. The dog, perhaps chiefly because of his long association with man as a member of his household, has been most molded in his mental as well as his physical nature. Such friendships are recorded between dogs on the one side and elephants, horses, deer, sheep, monkeys, badgers, raccoons, rabbits, cats, and hens, and doubtless many additions could be

made to the list. A smaller number of unnatural friendships are recorded of many other domesticated animals.

(b) Again, through association with man there has come a very marked increase of intelligence. In his wild state the dog must have been almost wholly governed by instinct, and this was true as well of his enemies and his prey. Under similar circumstances the reactions of all individuals of his own species would be substantially the same, and this is true of every other species with which he was associated. The changes of season, rhythms in the lives of species upon which he fed, and the alternation of day and night were constant qualities with which instinct could effectively deal. But in case of domesticated animals these conditions are changed. Seasonal variations have small effect, the ebb and flow of food supply due to migration, hiberuation, etc., are eliminated, night is turned into day. No longer does he deal with the mechanized reflexes of instinct, but his welfare depends upon adaptation to the conditions of human life with its multitude of motives and its variety of conduct. He must gain some conception of certain forms of conduct as means to certain ends, and he soon begins to select, unconsciously at first, the easiest means that will obtain the desired result. So intelligence must develop much more rapidly than it could under the uniform conditions of nature.

(c) Domestication must also have greatly hastened and increased the development of self-consciousness and self-feeling. Among wild animals there is little to awaken the sense of personality. Some phenomena in connection with mating, and with leadership in the herd or pack, some among birds, such as the apparently triumphant crowing of the cock after vanquishing a rival, seem to indicate some such feeling. But these hardly rank with the well-authenticated cases of jealousy among animals under domestication. It is also difficult to lightly dismiss the evidence that some animals distinguish between the laugh of approbation and that of ridicule, and manifest some feelings of self-satisfaction and chagrin. This is to be expected from the fact that the creature is now compelled to adjust his own conduct to the peculiarities of personalities far more pronounced than appear in the world of wild nature, and that constant discrimination, approbation, and ridicule on the part of the master tend to stimulate the growth of self-consciousness.

Realizing that in this border land of instinct and reason there are great difficulties in obtaining correct data and in rightly interpreting them, we may approach the study of truthfulness and deceit as they find manifestation here. Domestic animals are frequently taught to announce certain facts, par-

ticularly those that concern their own wants. Both dogs and cats indicate their desire to enter or leave a room, often by very conventional signs. A cat which I observed for several years, in attempting to gain the attention of some member of the family and so secure entrance to the house accidentally rang the doorbell; the door was promptly opened, and after two or three such happenings the cat regularly used this means of making its desire to enter known. The dog, at least, may be taught to give information of facts that are not of direct interest to itself, and to do so with considerable discrimination. The watch dog not only barks at the approach of strangers, but he may be taught to disregard the advent of a well-dressed lady or gentleman, while he will vociferously announce the intrusion of a peddler or a tramp. This seems to be the result of habit-forming during the period of training. There are a considerable number of cases on record in which domesticated animals have made known to their keepers an injury to a mate or to another animal with which a friendship had been formed. Several cases are recorded by psychologists in which warning has been given of mischief done by another of the species. There are also stories of dogs which have spontaneously sought to give information of an injury suffered by their masters or others with whom they were intimately associated. Most of these actions, however, seem to be more closely related to fidelity than to truthfulness.

When we seek for deception among the domesticated animals there is apparently more to reward the search. Many incidents of animal life are cited as illustrations of deceptive conduct in the writings of the comparative psychologists. A case discussed by Lloyd Morgan (*Introduction to Comparative Psychology*, pages 373-5) is a fair illustration of the class. A terrier had been taught to earn a portion of dessert by walking on his hind legs entirely around a long dining table. It was noticed after a time that he would start the journey as usual, but after he had reached a point where he could not be seen by his mistress would drop to all fours, only to rise to the erect attitude before he again came into sight. To some psychologists this seems a clear case of purposed deception, but Morgan easily eliminates any necessity for such an interpretation. He assumes that when the dog was taught the feat he associated with the reward the starting and ending of the journey on two feet. There must have been many failures, at first, to maintain the erect position through the whole journey, but these conditions were always associated with it. The method which he followed, then, was simply the selection of the easiest means by which the reward could be obtained.

A similar intelligent choice of the easiest means that will at-

tain a desired end explains the many cases of dogs that limp or feign sickness to gain favor or to obtain a ride in a carriage instead of running beside it. Romane's case of a dog who was ridiculed for his failure to catch a fly in his accustomed way, and then made a pretence of accomplishing it, going through all the movements and counterfeiting the evidence of satisfaction, may probably be placed in the same class, though self-feeling rather than the desire for physical ease or pleasure furnished the spring of action.

Most writers since Morgan seem to accept his view that we find no evidence of conscious deception among animals, even in a state of domestication. Some, however, are not ready to yield to his arguments. Triplett, in his study of Conjuring Deceptions, says, "It is not so easy to believe that there is no actual deception in cases like this described by Groos. He says, 'I once saw one (dog) drop a piece of bread that he would not eat on the ground and lie down on it, then with an air of great innocence pretend to be looking for it.'" From the brief description given it seems difficult to establish any connection with deception on account of the lack of motive, unless it be the self-deception of play.

While it seems safe at the present stage of comparative psychology to reject the view that there is conscious deception in any of these cases, we do clearly find that new motives appear that lead to deception in the objective sense. Remembering the remarkable effects of the close association of these creatures with man in the breaking down of the natural order of their psychic life we cannot at present determine whether this is in the line of evolution or of the perversion of nature's orderly course. The conclusion from the facts may be formulated as follows:—*Among domesticated animals the desire for physical and emotional pleasures which are beyond the range of the creatures actual needs is a motive which leads to conduct that is intelligently directed and is untruthful in effect, though not in conscious purpose.*

The Literature of the Subject

The only discussions of the relation of the facts which have been considered to the moral problems of truth and falsehood which have come to my attention are very brief and incidental. The first is in a lecture by Prof. Earl Barnes on "Truth *vs.* Lying." This valuable lecture has not been published, but in a report published in the Kindergarten Review, November, 1902, and in my own notes of the lecture, I find the statement that "falsehood is the highest form of virtue" among the lower animals. This statement (which as has been indicated is incidental to the main discussion, and for which Professor Barnes

perhaps ought not to be made responsible) is manifestly far from an accurate statement of the facts. We do not "at most find the animal telling the truth to its mate and its young." Truth has not evolved from falsehood, as seems to be implied, but has always played the more important and indeed the essential part.

The second reference is in Triplett's study of Conjuring Deceptions published in the *American Journal of Psychology*, Vol. 11, p. 439-510. The author bases his thesis largely upon his belief in "a universal instinct to deceive a biological tendency appearing throughout the animal world from simplest forms to the highest orders." Of such a *general* instinct I can find no trace. All of the primitive forms of animal deception are rooted in the self-preservative instinct. This gives off two branches, one aggressive, the other regressive. Objective deception occurs associated with both, but is not fundamentally related to either. In many of the cases in which it occurs it is, of course, instinctive, but it seems to be simply a means which is frequently used under many varying circumstances, rather than a uniform mode of reaction under any set of conditions which are common to even any large group of animals. It would seem to be as correct to say that there is a general instinct to run or to stand still or to climb trees.

The Relation of Objective to Subjective Veracity and Untruthfulness

It remains to inquire what relation exists between this unconscious, objective veracity and deceit of instinctive animal life and purposed and conscious truthfulness and falsehood. The latter seems never to appear among the highest of the lower animals and yet is common among the lowest savages. Is there a vital relation between the two? If so, what is it?

The connection is real and important, and does not seem difficult to trace. In case of veracity, its necessity wherever co-operation is involved is apparent, and hence such further development of social feeling as came with the evolution of human life implies a progressive extension of the field in which it is essential, and an increasing growth of the impulse toward ingenuousness. Perhaps this principle alone is sufficient to account for the increasing emphasis on the moral duty of truthfulness as men have risen in the scale of civilization and culture. Certain minor exceptions to the general rule find ready explanation under its terms.

Among the higher animals, particularly when domesticated, we find nearly all the motives for deception which appear in children, leading to conduct which is deceptive in effect. Adding to these conditions the realization of the power to deceive,

accompanied by the low degree of social feeling which must have characterized that stage of development, and subjective or purposed deception must follow. The question is simply how this consciousness arose. Beyond doubt it was through the observation of this instinctive conduct, deceptive in effect though not consciously directed to that end, that the possibility of misrepresentation of fact for a selfish purpose dawned upon the mind of man or his prehuman ancestors. As has been already intimated this step seems to have been accomplished in those stages of development which filled the present gap between animal and human life, and so this belief is not capable of demonstration by direct evidence, but all that we know of the rise of the reasoning powers confirms this view. The experiential judgment always precedes the logical. Primitive reasoning is inductive, from effect to cause. It was the observation of natural phenomena that led to the discovery of nature's laws. The discovery of the simplest tools through the accidents of primitive life led to the apprehension of mechanical principles. So must instinctive deception have prepared the way for the conscious untruthfulness of which ethics takes account.

If this be true, there is no real break between the phenomena which have been considered and those with which parent and teacher are concerned in the training of the child. Evidence that there is none appears in the fact that we may observe in the child the transition from one to the other as the first inaccuracies of statement, due to vivid and uncontrolled imagination and lack of maturity of other intellectual powers, give rise to the use of misrepresentation under the stress of fear or self-feeling, and finally to the willful and deliberately planned lie: though the transition is doubtless commonly facilitated by the rebukes and warnings of adults who misinterpret the earlier stages.

Pedagogical Implications

One great value of the genetic point of view in psychological research is that when in the study of a problem we turn to young children or to the lower animals we find the same factors reduced to lower terms. Much light has thus been thrown upon moral problems which seem exceedingly complicated as we deal with them in the ordinary affairs of life. So the investigation of the facts under consideration should have real value for purposes of interpretation of the conduct of children and discovery of principles to guide parents and teachers. All the conclusions that have been reached should be of value to the teacher of morals.

Applying the principle of recapitulation, we may expect that

deceit and falsehood will be much more prominent among young children than among adults. But if the conclusions drawn from the facts are correct, we should find a strong tendency toward truthfulness which can be made the basis for a wise cultivation of the spirit of veracity even among young children.

Almost every type of children's lie is prefigured in animal life: the lie of self-protection, the lie of altruism, the lie of self-interest, the lie of self-feeling and the lie of imagination are clearly marked, and the generalizations already made in connection with their consideration seem to have real value for the teacher of morals. One of the most significant lessons is that so much of good is bound up with the instinctive deceit: the wheat should not suffer with the tares.

A study of each type of untruth will yield valuable hints as to its control. For example, the lie of self-protection is usually told to parent or teacher to escape the pains of punishment. A review of the generalizations made from the study of animal life suggest that when the disciplinarian appears not as an enemy but as a friend to the child this lie will be eliminated. And the tactful punishments and wise and affectionate discipline of the best homes does secure this result. Again, the "lie" of imagination is nature's device for the education of the child, as necessary for his mental development as physical play is for that of the body. When this is realized it will not be considered a moral problem, and imaginative play will not be unduly checked. The dangers that lurk about it will be controlled by clearly drawing the line between fact and fiction, and thus confining it to its proper place.

Many such practical suggestions as these the thoughtful teacher will gain from a consideration of the facts which have been so briefly reviewed in this paper. When to this line of study is added a study of the evolution of human ideals of truthfulness, with consideration of their perversions and abnormalities, and a careful investigation of the attitude of children and youth of all ages toward truthfulness and lying, it would seem that a broad and safe foundation for the effective pedagogy of truthfulness might be obtained.

REPORT OF THE COMMITTEE ON SCHOOL HYGIENE OF THE WORCESTER PUBLIC EDUCATION ASSOCIATION

While emphasizing the demand of health as primary importance, your committee would call attention to the fact that efficiency in school work depends largely on hygienic conditions of work. They would respectfully submit if it is worth while for the city of Worcester to expend $600,000 each year for the education of its children it is worth while also to make the conditions such that these pupils can actually do the work they are supposed to do by regular attendance at the schools and by studying most efficiently while in the schools. The great injury to school work from epidemics of disease is well illustrated by the following sentences from Secretary Martin's last report to the Massachusetts Board of Education.

"In consequence of the presence of some infectious disease, chiefly diphtheria, scarlet fever or measles, during the school year of 1906-07, 318 schoolrooms were closed and classes dismissed. These rooms were in 70 towns. The classes included 12,122 children. The closure lasted from one day to four weeks.

"The waste of money involved in the cessation of work for days or weeks of more than 300 teachers and the loss of schooling suffered by the 12,000 children is a matter of no small moment; but what we may read in the statistics of diseases and defects not numerous or serious enough to cause the closure of the school is of much greater moment."

As we know too well, Worcester has had a large share of these absences and this waste of money on account of disease. It may be desirable to recount what means can be taken to control these common children's diseases. In recent years careful studies throw much light on this question. Let us consider separately the three diseases mentioned by Secretary Martin.

Diphtheria

During the last year a somewhat serious and persistent epidemic of diphtheria occurred, and several schools were closed for a few days on account of the disease. The difficulty in checking the epidemic seemed to be largely the fact that the disease is often carried by healthy persons or by those who have such a mild form of the disease that they are not aware

of it and continue about their work. As is well known, and as has been shown in this city, in some cases the Klebs-Löffler bacillus remains in the nose or naso-pharynx for weeks or even months after the patient recovers.

Probably the epidemic in this city would have been worse if it had not been for the work of the medical inspectors in the schools, but the experience in the past year shows that this is not sufficient, and it should be further perfected and systematized and supplemented by school nurses who can look after cases of disease in the homes.

The closure of the schools was a desirable and necessary action because it gave opportunity for an additional and desirable cleaning and disinfection of the buildings, and it tended to allay the anxiety of parents and children. But as a means of checking the disease it probably had little influence. In case of diphtheria with competent medical inspection it seems better to have the schools continue, because in this way it can be better controlled than when the children are on the streets and at home. Dr. Kerr, of London, has made careful study of this subject and in a recent report writes:

"It has been shown that school closure ought seldom or never to be necessary in elementary schools owing to the prevalence of diphtheria. With modern technique it is possible to discover those who are spreading the disease and to obtain their exclusion. The objections to school closure are that the 'carriers' are not discovered and isolated, and that there is not the least guarantee that at the end of the period of closure the children who are the cause of the spread of the disease will be innocuous. The closing of schools for diphtheria should be looked upon as a confession of impotence and defeat."

Scarlet Fever

The precautions to be taken in case of scarlet fever are much the same as in case of diphtheria. School physicians and school nurses are necessary for the detection and control of the disease. Children suffering from the disease should be excluded from the school for six weeks in any case. The advantages of school closure do not seem to be definitely shown. Dr. Cohn, in an investigation in Germany, finds no special effect of vacation on the number of cases of this disease. But Dr. McCallom and others in this State have found the number of cases greatly decreased in the summer months. Until we have more adequate health inspection, closure will probably remain often necessary in this country.

Measles

There are three methods of managing an epidemic of this disease. These may be called the *laisser-faire* method, the

political method, and the scientific method. The *laisser-faire* method consists in paying no attention whatever to the disease and continuing school work as best one may in spite of it. This is the one perhaps most frequently adopted, but it results in the death of a considerable number of the younger children. The political method consists in paying no attention to the disease beyond the exclusion of individuals until the disease becomes so prevalent that the majority of the people in the district demand school closure. The result of this method is to allay panic, but it is of no value in checking the disease. The scientific method consists in closing the schools when it is of some use to do so. It is obvious from a hygienic point of view that unless we decide to pay no attention to the disease apart from excluding those who are ill and the members of the same family, the scientific method is the only one of any value. Hence this should be considered somewhat in detail.

Some important facts have apparently been established by modern studies, among them the following: the greatest number of cases of this disease are likely to fall in the kindergarten period between 3 and 6. The mortality from the disease is much greater in early years than later. Most of the fatal cases occur before the age of 10.

Measles, as everybody knows, is very contagious, especially in its early or catarrhal stage. After infection from 9 to 14 days elapse before the disease appears. Contrary to common opinion, it seems to be rarely if ever carried by a healthy person, and it is not, like diphtheria, liable to be carried by the patient after recovery. Only very rarely does a person have the disease a second time. When it occurs in school, three crops are likely to appear: first, a single case, then a few more, or sometimes the majority of the children who have not had it, and then a third crop including nearly all the rest who are susceptible.

An epidemic is likely to come in a large city every other year; in rural places the epidemic is likely to occur every five or six years. In a city of medium size like Worcester it is likely to occur once in three years. A study of the cases reported by the Board of Health in this city for ten years made by Dr. Hodge shows that an epidemic occurred regularly every two or three years. Whenever a third or more of the children in the community have not had the disease, then there is sufficient susceptible material so that an epidemic is likely to occur.

The aim of hygiene is to postpone the disease to as late an age as possible. It should be kept out of the kindergarten at whatever cost to school work. The postponement of the disease to the elementary grades means that a smaller number of

children will have it at an early age. And the aim is also to make the time between epidemics as long as possible; for this again means that fewer young children will have the disease.

The objection may be made that postponement of the epidemic to the higher grades of the school will not save the younger children in the homes from contagion. This, of course, is true, but the children in the higher grades are likely to have fewer young brothers and sisters at home than children in the lower grades.

The scientific method of managing measles based upon the facts just mentioned consists of four things: first a complete registry of all cases, kept by the Board of Health, so that as soon as a case occurs in any school it will be possible to see just how many of the children have already had the disease. Second, in case of a kindergarten where a considerable part of the children are susceptible, closure of the class when measles becomes prevalent in the city, whether a case has occurred in this particular kindergarten or not, or else notification of all parents, warning them to watch their children carefully in case of colds or the like. Third, whenever a case of measles appears in a class, exclusion of all children of the same families who have not had the disease, and eight days after the first case appears in any class, closure of this class for a period of seven days, so that the second crop of cases will occur while the children are at home, together with notification of all parents to watch their children carefully. Fourth, careful instructions of both parents and teachers in regard to necessary precautions.

A good form for the notification and instruction of parents is that used in London. It is as follows:

(M. O. 19) London County Council

Notice to
The Parent or Guardian
of

From
The Head Teacher
(Infant's Dept.)
School.

As a case of measles has occurred among the scholars in the class which your child attends, it has been decided to close the class until . Measles is an infectious disease. You are therefore cautioned, in the event of your child showing any signs of this disease, to keep from contact with other children or from exposure in public places until a fortnight shall have elapsed after exposure to infection. A child who appears only to have a slight cold may have contracted measles and be dangerous to others. Any child who

has contracted measles must not resume school attendance for one month.

Date

Signature.

NOTE

Measles may be a very serious illness in young children, and many die from it. The early symptoms are those of a cold, which may be at first slight, there is generally running at the eyes and nose, sneezing and possibly cough. Many children lose their lives because parents allow them to go out of the house, thinking that the indisposition is only a slight cold, when it is really measles.

As an illustration of the scientific method of dealing with measles we may take the experience of the city of Graz in Germany—a city of about the size of Worcester. The medical officer in that city, Dr. Eberstaller,[1] reports from the statistics at Graz during sixteen years that the total number of cases of measles was in round numbers 22,000, of which 853 proved fatal. Among the children of the first year of life the mortality in the eight epidemic years reported amounted to from 16 to 35%, among children from one to five years of age between 2.6% and 5.5%, among children from five to ten years from 0.1% to 0.3%.

Dr. Eberstaller's method is as follows: to give apparently his most successful experiences: In the city of Graz 2 cases of measles occurred in one class on the 17th of October, 1898. As in the previous year only 19 cases of measles had occurred in this city of 125,000 inhabitants there was likely to be a good deal of susceptible material. Hence, the class was closed beginning about eight days after the detection of the first case, namely, on the 25th of October, and kept closed until the 3rd of November. Among the pupils of this class only one further case appeared during the closure, and this on the 31st of October. Apparently, as a result of this action, no further cases appeared, except a single one, during the Christmas holidays. Dr. Eberstaller has tried this experiment 103 times during a period of eight years, sometimes with success and sometimes without. Forty-four of these cases of school closure were decidedly successful, there was complete and permanent arrest of the disease after instruction was begun again. In 10 cases no disease occurred during the time of closure, hence, these instances may be considered as unnecessary. In 28 cases there was apparently no result, since immediately after the school began cases of measles occurred and the class

[1]Intern. Archiv of Schulhygiene, III, pp. 1-19.

had to be closed again or the first closure continued. In the remaining 21 cases the result was doubtful, as the same class some time later was attacked, the epidemic having continued outside the school.

Another successful instance was the following: in a girl's class of the People's School shortly before Christmas in 1905, two cases of measles occurred. Consequently the vacation was lengthened for two days in order to pass the critical period. During this time several cases were reported, but from January 12th on no case at all appeared in this part of the city, where there were 60,000 inhabitants.

Again, as a matter of school economy, it is important that a disease like measles should be treated scientifically. With the usual haphazard method a good deal of time is likely to be wasted, in the first place by the absence of children who have been exposed to the disease, and second by closure of the school after such action becomes useless. Here again, the experience of Dr. Eberstaller is significant.

An epidemic of measles occurred at Graz in the late autumn of 1895. The unscientific method was then in vogue. 2,878 cases were reported. No less than 83 classes were closed from two to three weeks on account of the measles. In round numbers 2,400 half days of school instruction were lost. Another epidemic of measles occurred in 1905. 2,825 cases were reported. In this instance the epidemic was treated scientifically. As a result only 45 school classes were closed and the loss of time amounted to only 360 half days of instruction. Hence, the school closure, after the first case appears, before the second crop, instead of increasing the loss of time is likely greatly to diminish it.

In regard to these diseases in general the following precautions are desirable:

First, registration of all cases.

Second, the exclusion of cases in compliance with the present State law.

Third, notification of parents whenever a case occurs in school.

Fourth, daily medical inspection supplemented by the work of school nurses to keep track of the cases in the home.

Fifth, closure of the school for measles, if possible, before the first case appears; if not, before the eighth day after the appearance of the first case, and this with notification of the parents.

The advantages of such a plan seem to be sufficiently demonstrated. Its adoption would prevent much illness and great waste of the pupil's time, and indirectly of the money of the tax-payers. Such a plan is sure to be adopted by the city of

Worcester in the not distant future. Its immediate adoption would save the lives of a considerable number of children.

TUBERCULOSIS

By Dr. A. C. Getchell

Recent investigations have shown that the death rate among children from tuberculosis increases rapidly during the period from five to fifteen years, that is, during the average school age. A necessary inference from this is that the school life of the child has something to do with this increase. It is well known that tuberculosis is contracted most often by those confined within doors, and particularly by those who live in ill-ventilated, dark, dirty rooms.

It is furthermore definitely known that a considerable period of latency exists after the infection is established before active disease develops. Now consumption, active, pulmonary, tuberculosis, is most fatal between the ages fifteen and thirty.

Thus it is seen that those who may have tuberculosis succumb to it with increasing fatality from the age of five to that of fifteen, and those who do not have it are more liable to infection during those years. Our public schools are maintained for a public purpose, the training of boys and girls to be useful men and women. A useful man or woman must be a healthy one. They cannot be useful unless they are well. Moreover, considering this particular disease the function of the school should be not only to maintain in as good health as possible those who are not well but to prevent infection passing to the well. Therefore anything that will remove tuberculosis from school children becomes a public duty and necessity. The solution of this problem demands no expenditure of care or money beyond that required for the general hygiene of the school, only it makes this more imperative. The requirements are: adequate free space around school buildings, well lighted, well ventilated school rooms and a proper system of cleaning efficiently carried out.

In view, however, of the prevalence of tuberculosis among school children and its possible spread among them, also in view of the fatality and easy prevention of the disease if suitably treated, certain elementary knowledge of it should be taught both to teachers and pupils, such as the necessity of competent medical advice relative to continued ill health, particularly persistent coughs. Furthermore, cleanliness, particularly of hands, should be insisted on; and such practices as spitting on the floor, wetting the fingers in the mouth to turn leaves of books, putting pencils or other objects that may pass from one person to another in the mouth, should not be allowed, and the reason for their hurtfulness should be clearly explained.

HEALTH INSPECTION

By Dr. Mary E. Barrell

The law of 1906, known as the medical inspection law, while requiring school committees or boards of health to appoint school physicians, and requiring examinations to be made at least annually of all school children, by the last section of the law makes it possible for any city council to nullify the law by refusing an adequate appropriation. By the first section of the law, trouble has arisen between the boards of health and the school committees, as it is not stated definitely which shall appoint the medical inspectors in the cities; but in the towns the board of health has no authority to carry on medical inspection. In Chicopee, Fall River, Lowell and Beverly, no appropriation has been made.

In only 186 of the 321 towns of Massachusetts, have appropriations been made, and medical inspectors been appointed. 61 of the remaining towns have appointed physicians, but as these towns have not received any appropriations of course the work has not been carried on.

In 68 towns, physicians have not been appointed nor appropriations received, 6 towns have made appropriations but no physicians have been appointed. The law of 1906 calls for an annual examination of the vision and hearing of all school children, the tests to be made by the teachers but prescribed by the State Board of Health. There being no expense to the towns involved in this examination no reasonable excuse can be offered for non-compliance.

The returns from 349 of the 354 cities and towns show that 432,937 children were examined by the teachers, and that 96,609 appeared to be defective to a greater or less degree in vision, and 27,387 in hearing. No provision of law exists by which parents may be compelled to seek expert advice, but it is the intention of the law that scientific examination by specialists shall be made in cases where defects are apparently revealed by the teacher's lists.

The returns show that notifications have been sent in 84,012 cases. Cases are numerous in which the most serious defects have existed for years, unknown to teachers, parents, and to the children themselves, and these cases are not confined alone to the homes of the ignorant. Reports of inspection have been received from only a part of the cities and towns, approximately of about 75% of the average membership of the public schools of the State, but these show that the work done has resulted in a marked degree in preventing the spread of contagious diseases, and in the discovery of many defects which can be remedied by treatment or operation if taken before the condition becomes chronic.

No thorough investigation has been made yet, to determine to what extent the various defects or disabilities found in the pupils have affected the work of these so-called defective children. A number of very interesting individual cases have been cited, and the improvement in the condition of this class alone would seem to more than repay the expenditure involved in the work of the medical inspectors.

It is impossible to make any general statement as to the duties of the medical inspectors, as the requirements are so different in the various cities and towns. In some, weekly visits are required with emergency calls; and others require daily visits. In many places no definite rules have been formulated. It is very desirable that uniform rules shall be decided upon for governing the work of the medical inspectors in all of the cities and towns, in order that the work shall be as effective as possible and productive of the greatest good to the school children of the State of Massachusetts.

In Worcester, in acccordance with the "Act Relative to the Appointment of School Physicians," money was appropriated and 15 school physicians appointed at a salary of $200 per year to carry on the work of medical inspection. The inspectors began their work Oct. 8, 1906. It was about this time that there were so many cases of diphtheria in the schools, and it seemed so hard to stop its progress. The inspectors rendered great assistance in helping to stamp out the disease. In the first three months 31 cases were discovered and excluded from the schools; three were walking cases, which were not very sick but capable of transmitting the disease to others, perhaps in its most malignant form. Some of the other acute infectious diseases excluded this last year were chicken pox 90, erysipelas 2, scarlet fever 7, tuberculosis 3, whooping cough 53, and measles 3.

There have been numerous diseases of the skin, including 189 cases of scabies, 432 cases of impetigo contagiosa, and 669 cases of pediculosis; various diseases of the eye, acute catarrhal conjunctivitis 92, trachoma 2, and other diseases of the eye not contagious, but which, if neglected, lead to serious defects of vision later in life; also numerous affections of the ear, which undiscovered and untreated would cause deafness eventually.

The discovery of the cases cited would more than justify the expenditure of the money appropriated for this work, but when to them are added the large number of other diseases discovered, it shows how important and necessary to the welfare of the pupils the work has become.

There has been little friction between the physicians and the parents, and nearly all seem to realize that the work done is

for the very best good of the pupils in every way. The inspection might advantageously be systematized under one responsible head—a specially appointed official as in New York City.

PLAYGROUNDS

By Frank Drew

There are two ways of looking at the play of children. The one is that children play merely to work off their surplus energy. We are disturbed by their restless activity when they are shut in the house, or when in public we wish they would be seen and not heard. In these cases we are concerned chiefly with our own interests. We think if children had something to do, if only they were occupied, there would be no need for them to play. In accordance with this view we send them to school, and we commend the teacher who keeps them busy,—firmly persuaded it is only mischief that is found by idle hands. The other view of play is that the child in play practices the occupations of adult life. The girl provides for her doll; she keeps house; the boy tries to reproduce the activities of one business after another; and in so doing they are getting ready to take their parts in serious work. But business and housekeeping are only part of life. We live in a society whose welfare depends on the degree to which its members stand up to their share in the community life and co-operate for the common good. The boys and girls who play base ball and basket ball, who belong to literary societies and to other co-operative groups, are fitting themselves for a mutual interest in the future responsibilities of citizenship. Play is thus seen to be an invaluable element in a child's education; perhaps the chief.

To-day there is much interest in play as preparation for adult life, and there are many organizations in Europe and America which are doing much for the promotion of play and for the provision of play spaces. Boston, New York, Chicago, Washington, and many lesser cities are seriously attempting to provide for play needs, and the sums already spent add up to millions of dollars; and the approving interest is growing fast. The call for playgrounds is not to be confounded with the movement for more parks. The former are a necessity for children; the latter belong chiefly to adults.

The playground movement grew out of an effort to meet certain needs of the summer months. At that time the schools were closed and hundreds of young children were wandering in the streets. To care for this multitude provision was made by voluntary organizations for vacation schools,—the first of which "was started in the old First Church of Boston in 1866." In

1898 a beginning was made in Worcester by members of the Kindergarten Club. In 1900 the work was taken over by the Women's Club. For the younger children how to play was the main thing; for those over nine years of age the emphasis has been laid on manual training or industrial schooling. The Women's Club carried on this public-spirited service year by year, with results of great value to our city, until 1906, when a vacation school was maintained by the school committee for five weeks at the Ledge Street School. An appropriation by the City Council for vacation school purposes in 1907 was not made in time to permit of its use. Efforts to get the City Council and the School Committee definitely to take up these sections of public schooling have thus far been unsuccessful. The outlook is brighter to-day,—thanks in part to the labors of the Committee on Manual Training and Industrial Education of our own Association.

Interest in an industrial education has grown rapidly in recent years. Indeed there is some danger there will be all work and no play the year through for boys and girls of all ages. To present the value of play as an important agent in the development of character and the maintenance of health, not for children only, but for everybody, is the aim of the playground movement. In provision for play Worcester has made a good beginning. The police department sets aside portions of certain hilly streets for coasting. The park commissioners clean the snow off the ice in Elm and University parks for skating. Thousands of persons use these wise provisions for winter sport. A fair supply of play apparatus is to be found in Lake and Hadwen parks; Crompton and Greenwood parks are playgrounds; and ball grounds are to be found in Lake and East parks. Here is a good showing of good work well done. Yet the ones who know most about the work—The Women's Club and park commissioners—know how much more the need calls for. Our schoolyards are small and often are in needlessly poor condition. Pools of water in some, projecting stones in others, render them unfit; while the schoolhouse is rare that has any provision for play in times of storm. Too often the scanty time assigned by the school committee for recess is taken away. In our report of 1907 the great sanatory and educational values of the recess were presented. We do not ask for play during school hours for the sake of play, but because the relaxation of the strain of attention which comes in play is a vital need.

What can be done is well shown by a statement of what is done at Spencer, Mass., under Supt. C. F. Adams. For 1,000 children distributed in 13 buildings provision is made for outdoor play as follows: 6 skating pools, 9 sand gardens, 8 hori-

zontal bars, 12 pairs stilts, 9 vaulting poles, 20 teeters, 28 swings, a basket ball set, 3 sets tether ball, and more than a score of other sets of apparatus, every one of which invites children to free play, and is simple, inexpensive and durable. For indoor play of the primary children there are two play rooms, and another making, fitted with teeters, lawn swings, settees, blocks and tables, and fully equipped sand gardens. The primary teachers are encouraged to play ring games on rainy days. Instead of the too often deadening "busy work", which is given the children of the primary grades to occupy them while the teacher is busy with other sections, the Spencer plan is to have a class recite, go to the yard, and later to come in for another recitation, so that about a third of the children of this grade are in the yard constantly in fine weather. The school libraries contain books of games; and the interest of the teachers is shown in that a number try to teach one new game a week. "Teachers tell us there are fewer gangs and fewer fights, and the truant officers testify to less truancy, since the school yards have become more attractive than the street."

In conclusion the following suggestions based on the local situation are offered.

1. School-yards. Use at recess. Grade and drain. A few loads of gravel and the use of a steam roller would do much for some of our school-yards. Supply with a number of pieces of simple apparatus teeters, swings, swinging ladders, slides, —put near the edge of yard so as to leave space for ring and running games. Supervision of manner but not of play.

3. Parts of certain streets withdrawn from general traffic and kept in good condition for very young children. Benches for mothers. There are over 100 Courts, Places, and "blind" ends of streets in Worcester, many of which could be used as play spaces. Portions of some streets could be set off for roller skating and hop scotch as other portions are for coasting in winter.

4. Playgrounds such as Crompton and Greenwood in every quarter of the city, for children of 9 to 14 years inclusive. Should be not more than one mile apart. Enclosed. Children to be left free so far as comformable to good of greatest number. Ponds for skating and hills for coasting are of this lot. "Double runners" should be barred from street hills that are used by small children.

5. Athletic fields. Extension of such facilities as are now offered in ball grounds and the bath houses at the Lake.

6. Extension of the Hamilton St. track to Lake Park, and of the Webster St. track to Hadwen Park. Sweaty, dusty mothers, bearing lunch baskets and extra wraps, and accompanied by troops of children, every summer trudge along the

stretches of road that lie between the ends of the trolley lines and the entrances to these parks. Storm shelters at these entrances would be of great benefit.

7. It would be well if the schoolhouses erected henceforth were provided with rooms for play in high, well-lighted, basements.

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LITERATURE

Studies in Education during the Age of the Renaissance, 1400-1600. WILLIAM HARRISON WOODWARD. Cambridge University Press, 1906, pp. 336.

Readers of Woodward's other writings, his Vittorino da Feltra and his Erasmus, will not be disappointed in these studies. A book of unusual clearness, a pleasing style and wide comprehension, it meets the need for a work in English covering the educational thought of two epoch-making centuries.

After a general survey of the Quattrocento and the beginnings of humanistic education, Vittorino's famous school at Mantua is again described, and the high ideals, combining the best of the Christian and pagan worlds, of this first modern schoolmaster are dwelt upon. The further development of the Renaissance in Italy is typified by Guarino da Verona, the real father of the brilliant University of Ferrara, and the representative of the scholarly ideal; by Battista Alberti and (1404-1472), whose education and training found their natural fruition in his emphasis on personality and individuality,—ideals which were to be fostered by home education; and by Matteo Palmieri (1406-1475), who stands primarily for training for citizenship and the realization of individual perfection in civic relations. All of these Italians reflect the social and political conditions of their time and seek by education to correct the evils and extravagances which were already apparent.

The Italian Renaissance was introduced to the northern countries by Rudolph Agricola (1444-1485). Agricola, a man of rare talents, great personal beauty and unusual versatility, and suffused with the Italian spirit, represents in himself the whole Italian Renaissance. Refusing to teach, he had still a wider influence through the scholars who followed him to Heidelberg to hear his disputations. To Erasmus (1464-1536), pre-eminently a man of letters, and of abounding faith in the value of antiquity, and like Agricola insisting on freedom even at the price of poverty, England owes the preparation of the soil for humanism. Cambridge University and St. Paul's School are living monuments to his influence. The educational writings of his later years show a good knowledge of child nature and an unusual psychological insight. But withal his education is for the higher classes and he is distinctly a representative of the aristocratic ideal.

This book marks a departure in the increased emphasis on Guillaume Budè, Mathurin Cordier, Cardinal Sadoleto, and Juan Luis Vives. To Budè France owes the establishment of the Royal Press which disseminated the teachings and thus brought about the triumph of humanism. Cordier, a Huguenot schoolmaster, is to be known as one who renounced higher teaching for the sake of grounding youth in the fundamentals of learning. His published colloquia give an intimate view of the times, and the relations existing in his school. Cardinal Sadoleto, made serious by the sack of Rome, wrote in 1530 his De Liberis Recti Instituendis, in which he seeks to harmonize the modern and Catholic world with all that was best in antique education. His treatise is a good introduction to the study of the Jesuit Ratio. Vives (1492-1540), a Spaniard, stands for a distinct advance.

He recognizes the importance of empirical psychology and writes at length on the pedagogical aspects of memory, forgetfulness and association. He lays increasing stress on bodily education and goes into details concerning school management. In the same chapter, Woodward epitomizes the treatise of another Spaniard, Juan Huarte, "The Examination of Men's Wits."

A chapter is given to Melanchthon, the "preceptor of Germany," with special mention of his influence in the reform and extension of the university system.

The Courtier, as "nothing less than the ideal personality as the Renaissance conceived it," is treated in Castiglione's tract of 1528. This serves as a model for the educational writings of England, where Thomas Elyot, Sir Humphrey Gilbert and others in their tracts developed an ideal education for the gentleman and citizen wherein his relation to the State is much the same as that of the Italian Courtier to his prince.

The book contains a complete outline of its various chapters, a chronological table of the Renaissance, and selected Latin Colloquia from the rare manual issued at Nuremberg. J. WILLIAM HARRIS.

Geschichte der deutschen Jugend-literatur in Monographien, von HERM. L. KÖSTER. Alfred Janssen, Hamburg, 1906. pp. 251

The author gives a history of the literature especially fitted for children and youth from the earliest forms of the picture book to the legend and folk-lore books.

Each chapter treats with considerable detail the history and development of the section of literature to which it is devoted, gives some space to criticism, and adds a chronological table of the best examples. There is also appended a bibliography of the sources of information. Picture books, folk songs, children's rhymes, the poets of children's songs, tales and fairy stories, folk legends and folk-lore books form the content of the various chapters. Both form and content of the book are attractive and it would be a boon to parents and teachers if some one would render a similar service for the youthful English reading public. The critical bibliographies are an especially valuable feature. THEODATE L. SMITH.

The Education of Our Girls, by THOMAS EDWARD SHIELDS. Benziger Bros., New York, 1907. pp. 299.

This is a sane and very timely presentation of the subject by an eminent Catholic with the approval of Cardinal Gibbons. It discusses psychical sex traits, grading, co-education and marriage, symmetry in the cultural development of the sexes, man and woman allies, not competitors, the social *versus* family claim, the vocation of women, domestic science, woman's college of the future and the home-maker of the future. It purports to be a discussion rather in the form of a Platonic dialogue between a professor of pedagogy and sociology of the University of America, a writer of economics, a female principal of a western normal school, a woman graduate of Michigan, a wealthy business man with limited education and Mrs. O'Brien, the mother of five children. They meet night after night and discuss the question from many points of view. While this method enables all standpoints to be represented, the dominant one is that the higher education of woman must not interfere with her domestic functions, and that it is now in grave danger of doing so.

Co-education, a paper read before the Pen and Plate Club of Ashville, N. C., April, 1907. By COL. ROBERT BINGHAM. pp. 20.

In this address, the speaker takes radical grounds. The woman

who misses husband, home and children fails to wear a crown. It is calamitous that unmarried men or women are ever envied because of their freedom. The "father's parental connection with his offspring is only momentary," while the mother's relation with her child is life-long. The maternal instinct is the heart and soul of womanhood. The Hebrew, Greek, Roman, Italian, and Chinese mothers and, to some extent, the German, have been from the modern point of view under-educated, and yet they have performed their chief function well. Their vitality is greater than that of American women who have more education than any other women in the world. From twenty-five to forty-five "the woman's life is absorbed in maternity," and she does not have a second period of growth like man. The girl ought to have one-fourth less strain for she has forty per cent. of physical disadvantage in mere education. She is now rebelling against the Almighty and saying, "Why hast thou made me thus?" Because she cannot stand the cruel strain she is now often under, she blames herself or nature. Dr. Woodruff Johnston showed that "In Cleveland, Ohio, seventy-five per cent of the girls who left the high schools during the year, and thirty-three per cent. of the boys did so on account of ill-health. And, an association of college women has demonstrated that of 705 female graduates of twelve of America's foremost female and co-educational colleges 19.67 per cent. lost their health during their college days, and 59 per cent. of them suffered some mental or physical disorder afterwards. Furthermore, of these 705 girl graduates only 26 per cent. married, and of these 37 per cent. were childless at the end of six years of married life. Those who became mothers brought on an average less than two children into the world, and of these 12 per cent. died at or immediately after birth."

Catholics are praised because "co-education of adolescents is unknown among them." Why, it is asked, do Smith, Bryn Mawr, Wellesley, and Vassar exclude men pupils, and are they reactionary on this ground? Why do college boys at their dances prefer to bring in other girls rather than dance with co-eds? A learned man is more esteemed and a learned woman is sometimes less esteemed for learning.

Illiteracy in New York. Rep. from the Second Annual Report of the New York State Education Department, Albany, 1906. pp. 527-558.

Eighty per cent. of the New York illiterates are foreign-born, yet there are more illiterate children of native-born than of foreign-born parents. Most of the illiterates are in large cities. In all classes there is more illiteracy above twenty-five years of age than below. Illiteracy, in New York, of children from ten to fourteen is now 71,000. Although this percentage is decreasing, the State went down in comparison to other States in the preceding decade from the eighth to the fourteenth place. In farming regions, ability to read declines with farming. We have come to let our overestimate of the importance of high school and college get into the way of our proper estimate of the need of elementary training. In the census of 1900, the largest per cent. of illiteracy was in Louisiana, 45%; North Carolina, 44%; Alabama, 43%; Mississippi, 42%; Georgia, 41%. Iowa stood number one on this scale with only 2%, and Nebraska was second, Kansas third, Washington fourth, Utah fifth, Oregon sixth, Ohio seventh, Wyoming eighth, Minnesota ninth, Illinois tenth, while Massachusetts only ranked twenty-second in this list and New York nineteenth.

The People's Disease: How to Prevent It, by WILLIAM R. WOODBURY. Rep. from the Boston Medical and Surgical Journal, Vol. 158, No. 13, March 26, 1908, pp. 405-410.

The people's disease is dental caries. On a basis of the examina-

tion of 2,200 children in New York, it appeared that 72% were badly in need of dental treatment, yet there is only one school dental clinic. At present, thirty-three of the chief cities of Germany, owing largely to the important work of Jessen, of Strassburg, have such clinics, and aural hygiene is a department which has considerable stress in the training of teachers. Defective teeth are known to be connected with tuberculosis, and the throat and glands, and Osler says "There is not any one single thing more important to the public in the whole range of hygiene than the hygiene of the mouth. If I were asked whether more physical deterioration was produced by alcohol or by defective teeth, I should unhesitatingly say defective teeth." At adolescence, eating habits need attention as the proportion of solid food is increased as is the propensity for sweets and mild acids. The tendency to bolt food, unchewed, is often due to poor teeth, so is stuffing and even defects of voice, and in chronic gastritis the teeth are an important cause. Tooth rot bars policemen or firemen. The crushing power of natural sound teeth is two hundred and seventy-five pounds, that of the best made artificial teeth but twenty-five pounds.

The Physical Defects of School Children, by JOHN J. CRONIN. Rep. from the New York Institute of Stomatalogy and Allied Societies for December, 1907, pp. 9.

The Health of New York School Children from the Point of View of the Department of Health, by JOHN J. CRONIN. Rep. from Archives of Pediatrics, October, 1906, pp. 10.

Cronin tells us that New York City with a budget of $130,000,000 employs through its department of health, one hundred physicians at $100 a month, and fifty nurses at $75 a month in examining 800,000 children. There should be at least one nurse and one physician for each two thousand children. Medical inspection began in New York in 1897, to prevent contagious diseases. Teachers were, at first, rather unwilling and unable to detect these diseases. In 1901 a special commission of oculists reported that seventeen per cent. of the children reported had trachoma. Children with any contagious disease were excluded and this reduced one-half of the population of some of the schools. Conditions have now greatly improved. We are told on a basis of 650,000 pupils, the per capita tax on each is twenty cents a day. Twenty-four thousand children excluded one day puts a useless expense of $4,800 upon the city. Probably about 17,000 have trachoma. Since 1890 there have been in New York only about 6,000 cases of small pox, two cases only among school children. This reduction is due to vaccination. Great progress is reported in the fact that now about one-half the parents follow the advice of the department of health. With thirty per cent. of the children behind the class proper for their age, it is estimated that six per cent. lose one year in every eight. Despite these conditions, however, the condition of the health of children is on the whole rather favorable, in spite of the fact of the large aggregate numbers found ailing. One school has a special class for backward children and a great majority of these are more or less defective. The writer advises that underfed children should rest during the recreation time and take nourishment. Certain standard lectures on hygiene should be given in every school.

The Influence of Occupation in the Prevention of Mental Reduction, by H. A. TOMLINSON, M.D., Superintendent St. Peter's State Hospital. pp. 16.

The writer, although opposed to exploiting the labor of inmates of insane asylums for commercial purposes, is a very ardent advocate of labor which is the best form of pastime and of training. He believes

that nothing so tends to prevent the rapid deterioration of mind that confinement itself as well as insanity tends to cause. Work gives control, stimulates weakened capacities, and improves the digestion, appetite, and health.

Mind in the Making, a Study in Mental Development, by EDGAR JAMES SWIFT. Chas. Scribner's Sons, New York, 1908. pp. 329.

This book elaborates what is called the most significant tendency in the education of literature to-day, viz., the substitution of the individual for the course of study as the basis of constructive pedagogy. The growth of American cities has centred attention upon the machinery of school systems, while increase in college attendance has submerged the individual until it has been found that he has assets that have been overlooked. The book is a plea for the personal element in education and for an expansion of experimental chapters. Although a number of the ten chapters which constitute the book have been printed elsewhere, it makes as arranged here a commendable unity. The chapter heads are: standards of human power, criminal tendencies of boys, their cause and function, the school and the individual reflex neuroses and their relation to development, some nervous disturbances of development, the psychology of learning, the racial brain and education, experimental pedagogy, school masses and education, man's educational reconstruction of nature. The volume as a whole is full of interesting and, what is far better, to a great extent new matter which the author has spent years in accumulating and correlating. He insists that a large part of the child's soul is not educated in school the methods of which are not broad enough to be commensurate with the magnitude of human nature. He has very bitter language for the way in which the child now is sacrificed to the system until individual traits are in danger of being stamped out. Perhaps still more bitter are his denunciations of the way in which the individuality and the freedom of the teacher is now limited at every point both by system and by the superintendent. He shows from the study of the lives of scores of great men how many of the leaders of the human race have been accounted dull almost to the point of worthlessness by the school and thinks this of itself is a sufficient indictment against existing methods. He points out how the brain continues to grow on to old age and shows the bearing of its plasticity upon his problem. This note is by no means an adequate indication of the richness and value of this book which should be in the hands of every leader of education to-day.

An Introduction to Child Study, by W. B. DRUMMOND. Edward Arnold, London, 1907. pp. 348.

This author has been one of the leaders in the child study movement in Great Britain and has here set down with an Englishman's good practical sense a general account, not so much of the movement but of the main results so far achieved, together with references to the more important literature. Altogether he has written a work that is likely to have wide currency, not only as a general introduction to the subject but as a text-book. The chief topics dealt with are the relation between biology and child study, the methods of the latter, weights, measure and growth, the senses and nervous system, the health of the child, fatigue, instincts in children, habit, interest, forms of expression in speech and drawing, moral and religious traits, peculiar and exceptional children. The book is certainly one of the most readable in the field.

Character Forming in School, by F. H. ELLIS. Longmans, Green & Co., New York, 1907. pp. 235.

All agree that character building is the chief function of the teacher and this book is compiled to show a method that has been applied in a large elementary school to children from three to fourteen. The lessons are printed as they were prepared and given and the weekly schemes copied from the teacher's note book and the compositions are those done by the children. In the infant schools, the topics to each of which a month was devoted, are the following: love, obedience, unselfishness, courage, self control, harmony, joy, with stories, games, music, nature talk and reference books appended. In the girls' school the chief topics are resolution, self-reverence, knowledge and control, harmony, joy, ideals, loyalty, altruism, self-reliance, faithfulness, obedience, good will, perseverance, truthfulness and co-operation. Each of these topics has its literature, its Bible texts, its poetry and numerous characters from literature or history that are supposed to illustrate it. The complete scheme of virtues comprises thirteen in all. There is also a brief talk, sermonette or story and nature's co-operation is invoked. The method differs in some essential respects from the so-called Brownlee method.

Departmental Teaching in Elementary Schools, by VAN EVRIE KILPATRICK. Macmillan Co., New York, 1908. pp. 130.

The author who is a public school teacher in New York has had a wide experience and is convinced that a proper form of departmental teaching will bring a wealth of gain to any elementary school and she here attempts to set forth the most effective plan. She realizes that some of her principles are so fundamental that they may seem commonplace and also that many forms of departmental teaching have failed. Her chapters are as follows: in the first the advantage of expert teaching, in improved discipline, physical condition, equipment, enrichment of the high school, attractiveness to teachers, distribution of sex control, talent developed, individuality increased, etc., are set forth. In the next, objections are considered. These are overwork, difficulty of correlation, narrow-mindedness of teachers, increased complexity of school organization, the diminution of teachers' personal influence. Under the principles of adaptation, the functions of the teacher are considered in relation to the pupil, study in the school and the threefold nature of the child, intellectual, moral and physical. Under the plan of adaptation the author considers control of children, presentation of topics, faculty organization, the selection of classes, studies, programme and simplification of management. In discussing details the following topics are discussed: the length of period, discipline, attendance, correlation, absent teachers, supply, fire-drill, detention signals. Then follow mistakes. Those here enumerated are the danger lest all studies be departmentalized, the moving of children from room to room, the promotion not proportionate, too much presentation, too many teachers in a division. The method may be limited by the size of the school, the class or the part of the course to be departmentalized. Other plans are the study-hall method, the peripatetic method and departmental unity for the year. The final chapter describes optional introduction, preparation and examination of teachers, comparative results and laboratory work. There are eleven illustrations.

The Kindergarten in American Education, by NINA C. VANDERWALKER. The Macmillan Company, New York, 1908. pp. 274.

The author is in every way very competent for her task. America has become the most representative field for the kindergarten in the

world where it affects far more children and involves far more expense than in the land of its origin. The writer here points out its relations to educational progress, describes the period of its introduction, its early literature, its extension, relations to woman's clubs, church, Sunday-school and missions, temperance, settlement and welfare work, its organization and the presentation of its results in exhibitions, has a good chapter on progress in kindergarten literature and its advance in the public school system, its influence on elementary education, and, finally, a good chapter on new tendencies. Altogether it seems a fair treatment of the new and the old points of view and in this respect marks a distinct advance since most kindergarten literature has so far been hopelessly devoted to the metaphysical side.

Our Colonial Curriculum 1607-1776, by COLYER MERIWETHER. Capital Publishing Co., Washington, 1907. pp. 301.

This is an interesting and valuable study. The first chapter on elementary courses tells of the original New England primer, the education of girls, the horn book, how children of our forefathers read, wrote and ciphered and describes their books. In treating the college course, he describes one of its prime purposes as that of saving souls, tells how the various topics in the earliest schedule of Harvard were taught and how it set fashions for the topics and methods of other American institutions. The treatment of ancient languages is particularly full and goes back to Sturm and Comenius, characterizes the methods of Lilly and Cheever, describes the old dictionaries, texts, ponies, and then outlines the development of the study of Greek and Hebrew. Another chapter is devoted to the very prominent place held by theology and philosophy, tells us how Chaldæan and Syriac were taught, how love ruled and how hard it was for ethics to be admitted and describes the rise of science. Geography, modern languages, mathematics, science are other chapters, and the last, and, perhaps, the most interesting of all, is a characterization of the old disputations.

The Demonstration Schools Record: being contributions to the study of education by the Department of Education in the University of Manchester. No. 1. Edited by J. J. Findlay. University Press, Manchester, 1908. pp. 126 (Educational Series, No. 2).

It is intended to issue at convenient intervals successive numbers of a publication such as is here presented in order to acquaint subscribers and others with the work of the demonstration schools and the investigations that centre about them. In this number, the chief concern is to show how a demonstration school can supply the needs of a University department of education. The first article is on the use of demonstration schools in the study of children and some social aspects of child study. Then follow the study of curricula and method, the syllabus of science teaching, the first year's course in French, problems in the corporation, life of school, the control and support of demonstration schools, language work in history teaching, with a supplementary article on Mrs. Fidden and the trustees and by-laws of the school that bears her name.

The Management of a City School, by ARTHUR C. PERRY. Macmillan & Co., New York, 1908. pp. 350.

We are told that there has been no work hitherto devoted to the duties and problems of the position of school principal. This author, therefore, comes forward with chapters on the relations of the principal to the State, the public, the authorities, teachers, pulpit, material equipment, physical welfare of the pupils, their scholastic progress,

their moral development, and ending with a final chapter on the qualifications of the principal, his adjustment to his position, his personal growth and the position itself.

Educational and Legislative Problems, by JOHN P. SUTHERLAND. Rep. from North American Journal of Homœopathy. pp. 16.

This is a very interesting and able argument in favor of a lower degree in medicine, the licentiate, besides that of the doctor of medicine. The public needs it as there are far too few regular practitioners. This need is felt chiefly in the country, and there are many rural districts that are to-day almost without physicians. These positions could be filled by licentiates who would, of course, always have the possibility before them of proceeding to a higher degree. We must not, he says, invite the fate of the general "who rode so far in advance of his army that they lost him altogether and went into battle unofficered." We must not pull up the ladder after us in order to work solely to exalt the dignity of the profession. We must aim at maximum efficiency, or the greatest good for the greatest number.

A Plan for an Exchange of Teachers between Prussia and the United States. 576 Fifth Avenue, New York, March, 1908. pp. 7. (The Carnegie Foundation for the Advancement of Teaching.)

This institution now proposes the following plan: A number of young men teachers are to be appointed either for half an academic year or a whole year to visit one or more Prussian schools in a single locality, to receive twenty-five to twenty-seven dollars and a half per month, to attend instruction in all classes, to be chaperoned by school directors who are to introduce them into the social life of the community and help them in their studies. They are to hold informal conversations with the German classes two hours a day; each candidate must have had at least one year's experience as a teacher and some facility in German. The work will be in a gymnasium or Realschool. Conversely, German teachers are coming to American high schools or colleges of good standing. These must be graduates of some German university, have taught a year, and schools wishing their presence must apply. Our teachers must not publish the special results of their inquiries except with permission of the proper authorities, but it is understood there will be no objection to serious and well-informed publication.

Die Tätigkeit der Unterrichtskommission der Gesellschaft deutscher Naturforscher und Ärtze, von A. GUTZMER. B. G. Teubner, Leipzig, 1908. pp. 322.

The first conference described is that of students and teachers of nature at Cassel in 1903, then that of mathematics and natural scientists in secondary schools in Breslau, 1904, then that of naturalists at Meran in 1905, then the reforms of the conference at Stuttgart, 1906, and their continuation in Dresden in 1907. These meetings dealt in great detail with special topics and the various grades, especially for *Gymnasia* and *Real* schools. The discussions were of such problems as the proper training in mathematics for each year, then as to the place and pedagogic development of chemistry, biology, geology, mineralogy, anthropology, botany, physics, etc. Incidentally, the hygiene of these topics is treated and one interesting section is devoted to sexual training in the higher grades. Another fruitful topic of discussions was the further scientific development of those preparing for the teaching of mathematics and sciences, and in this discussion, too, there was much detail.

Proceedings of the Twenty-first Annual Convention of the Association of Colleges and Preparatory Schools of the Middle States and Maryland, 1907. Published by the Association, 1908. pp. 140.

A prominent feature of this meeting was the criticism of present methods of graduate instruction in their effects upon secondary teachers. It is true that not many of the latter have ever done graduate work, but those who have, are likely to be too specialized. They teach pure rather than applied science and thereby miss a spring of interest on the part of the pupils that is very important, and thus have been really unfit for this work. Balliet says "not one in fifty of the men and women who take the doctor's degree in science or in mathematics has the least suspicion of the problem before him when he begins teaching in a secondary school." Perhaps this is worse in literature, which is far too philological and critical. Those intending careers as secondary teachers should, perhaps, have a special course. The lecture method does not fit the high school. University trained teachers do not illustrate enough but teach over the heads of their pupils. The text-books they write are too theoretical and abstract. Hence, some have insisted that the university has had a "deleterious and pernicious influence upon the high school and its graduates should be avoided." Another topic was modes of admission to college. There is first, the old-fashioned examination; second, the central board; third, the State examination of New York, rather to determine competency to graduate than to admit to college; and the certificate system is the fourth. President Rhees regards certificates as better tests than separate examinations. President Woodrow Wilson, of Princeton, in his address criticised the schools in the roundest terms: "The children of the past two or three decades in our schools have not been educated." The same is true in the college: "With all our teaching we train nobody, with all our instruction we educate nobody." We do not admit this publicly but we confess it when we are alone or upon our knees at night. "We are on the eve of a period of reconstruction." He wishes pure science, philosophy, literature, history and politics. He would give each pupil thorough instruction in something fundamentally, say one language, Latin, with others secondary, or insist upon mathematics or English as central. "We have been caught in a ridiculous system where we are trying to teach a student everything and do not teach him anything." Each should be limited to a small body of great subjects. We must simplify. We have annexed vast territories of knowledge, as we have annexed the Philippines and Porto Rico while they remain essentially foreign territories. Thus we have "missed the meaning of education, forgotten to assemble its elements and to concentrate its methods." Another speaker pleaded for the abolition of the term "preparatory schools." The importance of secondary schools depends upon the "importance which the colleges attach to their entrance examinations and certificates." Instead of fitting for college, secondary institutions should do work that bears more directly upon present social and economic problems. Preparation does not constitute the best training.

The Conditions and Tendencies of Technical Education in Germany, by ARTHUR HENRY CHAMBERLAIN. C. W. Bardeen, Syracuse, N. Y., 1908. pp. 108.

Technical education is perhaps now most vital in Germany, which has been developing it longest and where it has become part and parcel of the pedagogic fabric of the nation. The author has made a careful study of this topic and after classifying the schools describes their various classes, viz., continuation, trade, secondary, technical schools

and those for building trades, foremen, textile occupations, the industrial schools of Bavaria, higher technical schools, those for industrial art or art trade schools. At the close he gives a bibliography of the more important literature, although most of his references are in complete, as is the literature. It is on the whole, a valuable handbook.

Educational Woodworking for Home and School, by JOSEPH C. PARK. The Macmillan Company, New York, 1908. pp. 310.

Manual training is increasing in the curriculum in the public school and with it has come a demand for a text-book that can be put into the hands of the pupils so that they may be held responsible for important subject matter in connection with wood work. The book should be used under the direction of a skilled instructor. It is divided into several parts; one dealing with wood-working tools, the second with machines, the third with the study of wood, the fourth with fastening devices used in wood construction, the fifth with wood finishing, the sixth with exercises, and the seventh with turning. The book is copiously illustrated with more than 250 cuts.

Our Children, Our Schools, and Our Industries, by ANDREW SLOAN DRAPER. C. W. Bardeen, Syracuse, N. Y., 1908. pp. 133.

The Commissioner of Education for the State of New York here elaborates an address in which he sets forth with characteristic vigor the necessity of teaching branches that lead to craftsmanship and tells us a little something of what is done abroad and closes with a number of recommendations such as the need of up-to-date vital statistics, the requirements of attendance at seven instead of eight. Vocational schools should begin at the end of the elementary school course, should last three years, open both day and evening, and he would shorten the elementary school to seven years, assuming that if the child does not go to high school, his school work will end only with his seventeenth and not with his fourteenth year. He would put some industrial work into the elementary schools from the start, and urges every child on leaving the elementary school to either go to high school, to a trade school or to work; expects the school will keep track of him till seventeen, and would modify child labor laws and avoid all conflicts.

Report of a Study of Probation in Yonkers, New York, made on behalf of the New York State Probation Commission in Oct. and Nov., 1907, by ARTHUR W. TOWNE, Secretary. J. B. Lyon Co., Albany. pp. 40.

This very careful study shows that probation in Yonkers has, during the first year, benefited more than two-thirds of the probationaries, has reduced truancy commitments, and brought financial economy. The report urges more professional probation officers in addition to volunteries, and wants both men and women. Investigations before trials should be fuller, and the term of probation should not be less than six months. Probationary meetings should consist of small groups.

School Reports and School Efficiency, by DAVID S. SNEDDEN and WILLIAM H. ALLEN. Macmillan Co., New York, 1908. pp. 183.

This is the second of the publications of the New York Committee on the Ethical Welfare of School Children and will command widespread attention. The articles are as follows: the purpose of educational statistics; the beginnings of school reports in American cities; efforts of the N. E. A. to improve school reports and secure uniformity; examples of tables and other forms of presenting school facts

used in typical city reports; important questions not answered by existing reports; suggested economies and improvements in reports and a practical study of one school report, New York City. It is interesting to learn that the work of this society is entirely independent of any existing school system and that it can criticise, as it freely does, the mode of presentation, even of the city of New York in which it is situated. The work of these two investigators here is said to have distinctly modified for the better the form of presenting the annual report of the superintendent of the schools of New York City. The origin of this series dates back to 1904, when the Board of Education of New York City had to curtail its vacation, night schools, recreation centres and popular lectures for want of funds. A discussion followed in which the question arose how many would be injured by cutting off the so-called social features of the school. Various other questions have arisen meantime, such as fads and frills, free meals, flexible grading, promotions by subjects, teachers' salaries, all of which were discussed on theoretical grounds, as if New York had no experience. The conviction, however, grew that reasoning from fact to policy would improve the schools, and so a committee on physical welfare of school children was organized and three studies are ready for publication. One of these papers proves that physical defects due to home conditions are not confined to the very poor or emigrant class. The second confirms the notion that the buildings, home study and curricula are manufacturing more defects than the physician, nurse or dispensary can correct. The third study is the above presented.

Menschen die den Pfad verloren: Erlebnisse aus meiner fünfjahrigen Tätigkeit als Polizei-Assistentin in Stuttgart. Von Schwester Henriette Arendt. 2nd ed. Max Kielmann, Stuttgart, 1907. pp. 115.

The writer characterizes the different groups of women under police supervision and has a curious chapter as to the moral conception of prostitutes, and finds many of them psychically defective. The relations between the State and their vocation, the various attempts at amelioration and rescue, the care now given to unmarried mothers and their children and suggestions for penal reform make up the substance of this book by one who has had long experience in this field of work.

Bill, H. R., 17299, Gov't. Printing Office, Washington, D. C.

This bill is to authorize a commissioner of education to conduct special investigations, and diffuse the information thus obtained. The topics specified are industrial training, rural schools, agricultural and mechanical, schools, higher education, hygiene, construction, equipment, welfare of children and efficiency, legislation, records and accounts, and the sum of $40,000 is to be appropriated for this work.

Vorlesungen über Deszendenz-theorien mit besonderer Berücksichtigung der botanischen Seite der Frage, von J. P. Lotsy. Gustav Fischer, Jena, 1908. pp. 799.

Part second . . . the author here continues what was begun in his first part, beginning here with the 22nd lecture and ending with the 49th. Some of the chief topics here treated are illustrations of selection, the limits between continuous and discontinuous variability, orthogenesis, the various preconditions of Darwinism, heredity, the geography of plants and animals and biotic factors determining ancient flora and fauna. The chief objection against Darwin he finds in the problems of isolation. The later lectures are concerned with post-Darwinian thought, especially Wallace, Nägeli and DeVries.

Among the An-ko-me-nums or Flathead Tribes of Indians of the Pacific Coast, by THOMAS CROSBY. William Briggs, Toronto, 1907. pp. 243.

The author has spent his life among these Flathead families of Indians in Northern Oregon, Washington, and Southern British Columbia, and he tells a very interesting story of his own experiences and prints a number of interesting photographs.

The Indian Book: an offering by the American Indians of Indian lore, musical and narrative, to form a record of the songs and legends of their race, recorded and edited by Natalie Curtis. Harper & Bros., New York, 1907. pp. 572.

The author is an expert musician, an educated and refined lady of means who years ago developed great interest in the Indians and has spent a great deal of time among them studying more especially their music, a great body of which she has both transcribed and learned. In this volume she modestly lets the Indians speak for themselves, transcribing their language and their songs and profusely illustrating her book with photographs, copies of original drawings some of which are made for this express purpose. She deals with the Eastern Indians, those of the Plains, the Lake, Northwestern, Southwestern and Pueblo tribes. The Indians, we are told, "are the authors of this volume." Even the cover designs, title page and preface were made by them. Over a hundred songs are given with music and with the Indian words translated. Some of the stories are pathetic in their simplicity and many of the songs are very moving.

The Development of Modern Europe, an Introduction to the Study of Current History, by JAMES HARVEY ROBINSON and CHARLES A. BEARD. Ginn & Co., Boston, 1907. pp. 362.

At last we have a school history which subordinates the past to the present, the author of which aims to enable the reader to catch up with his own times, to read intelligently the foreign news in the morning paper. It is not creditable that we know so much more about Charlemagne than about Bismarck, or that our current histories fail to connect the past with the present. Such, at least, is the ring of the preface. But in point of fact, we have here just an ordinary good text-book in history, the latter part of the second volume of which does make useful and interesting connections with the present, with full page portraits of Darwin, Karl Marx and so on with many contemporary allusions, especially with regard to Eastern questions. All this is to be most heartily commended, but the book by no means fulfills the ideals of the present reviewer in its modernity, for he believes that there is a sense in which for pedagogic purposes history should be written backwards and that men should first of all be taught to live in the present with all its palpitating interests and refer to the past only so far as it is necessary to understand the present. This formula this book does not conform to, although it certainly has its place and marks a step in the right direction.

The Peoples and Politics of the Far East, by HENRY NORMAN. T. Fischer Unwin, London, 1907. pp. 608.

Henry Norman, who was formerly well known in this country, here prints another book, the result of four years' travel in the East. He has described and discussed no place he did not visit and in all of them he remained long enough to learn the views of local authorities and to acquire some of their confidence. The East is the wonderland of the world and also the seed-bed of a multitude of new political issues and it is from this point of view that the author has chiefly

written. The countries described are The British Empire, France, Russia, Spain and Portugal in the Far East and then China, Korea, Japan, Siam, Malaya. The book is well provided with maps and photographs. It need hardly be said to those who have studied Mr. Norman's earlier works that the style is very attractive.

Die gelbe Gefahr im Licht der Geschichte, von FRITZ FREIHERR VON DER GOLTZ. Friedrich Engelmann, Leipzig, 1907. pp. 120.

In this timely book the author traces the various irruptions of Tartars and Huns into the West since the time of Genghis Khan. Since his day there seem to have been at least four, and the author attempts by a number of maps to indicate the approximate origin of these barbaric hordes as well as their course in Europe. Between the first and last of these invasions some 200 years elapsed. Everywhere they destroyed and did not build up. There seemed to be neither development nor decline. This makes the recent progress of Japan all the more remarkable in the author's eyes.

Government by the People—the Laws and Customs Regulating the Election System and the Formation and Control of Political Parties in the United States, by ROBERT H. FULLER. Macmillan Co., New York, 1908. pp. 261.

This is an attempt to describe a government by the people in the United States so far as each voter is entitled to participate in it personally; also how political parties are constituted, the elections conducted and the devices to hinder or distort the record of the mandates of sovereign power. Argument is eschewed and theories of reform are merely stated. A brief history of elections and election laws has been drawn up. On this plan there is first a characterization of government by elections, then the methods for qualifying and identifying voters, primary elections, nomination of candidates, voting on election day, in direct elections, bribery and intimidation, supplemental safeguards against fraud, experiment and reform parties and their organizations, with appendices on State regulations of the voting privilege and the party platforms of 1904.

The Tusculan System, by ARCADIUS AVELLANUS. Philadelphia. pp. 15.

As long ago as 1893 the writer began in his academy at Philadelphia a serial primer for use in learning colloquial Latin. This movement spread to many parts of the world and we now have the system set forth in an effective text-book. The old method does not teach language so much as the philosophy of language, that is, grammar. It is about language rather than language itself. By this method, every one must speak as much Latin as his lesson demands. Books are removed from sight and the student falls back upon the old tracks that connect the ear and the vocal organs.

Latin Word-list, by G. H. BROWNE. Ginn & Company, Boston, 1907. pp. 84.

The student here finds the vocabulary of Cæsar's complete works and of all Cicero's orations grouped according to the frequency of occurrence and so arranged that the English meanings which are on separate pages are not visible at the same time, but can be brought into sight and on line.

Die Milchstrasse, von MAX WOLF. Johann Ambrosius Barth, Leipzig, 1908. pp. 48.

This delightfully illustrated pamphlet, based on a popular lecture, gives us a brief history of the recent photographic studies of the

milky way and leads on to the conclusion that we must either believe from the configurations that a great body of dark matter has penetrated from beneath or above and veiled gradually all the more distant stars so that the milky way is only a visible remainder of a once far greater but now vanished glory, when the heavens perhaps were themselves all ablaze, or else the gaps and chasms in the milky way are real furrows or obscurities in the stars themselves, the result of either some splitting or some obscuring process of which we know nothing. There is, however, a great new hope that by persistent photographic study and comparison, especially of the anterior layers of the milky way, something may be learned of tendencies or motions which will shed light upon the above and perhaps other questions. The mist seems almost always on the edge of the gaps as if there were a progressive process which was advancing. This, too, favors the view that the milky way is a residue.

Select Methods in Food Analysis, by HENRY LEFFMAN and WILLIAM BEAM. 2nd rev. and enlarged ed. P. Blakiston & Son, Philadelphia, 1906. pp. 396.

It is a source of satisfaction that the first edition of this work was so speedily exhausted and that another much enlarged one has now appeared; also that American work is rapidly becoming the leader in food analysis, owing to the excellent equipment of the laboratories at Washington. The analytic methods are either physical or chemical and the applied analysis and special methods are described for a long list of foods . . . starch, flour, meal, bread, candies, sugar, fats, oils, cheese, tea, coffee, condiments and spices, alcoholic beverages and fresh fruits.

The Prevention of Venereal Disease through Education, by PHILIP ZENNER. Reprinted from the Lancet-Clinic, Dec. 14, 1907, pp. 8.

Zoölogy. A Lecture delivered at Columbia University in the Series on Science, Philosophy and Art, Dec. 11, 1907. By HENRY EDWARD CRAMPTON. Columbia University Press, New York, 1908. pp. 36.

Studies in Victor Hugo's Dramatic Characters, by JAMES D. BRUNER. With an introduction by Richard Green Moulton. Ginn & Co., Boston, 1908. pp. 171.

Evolution, Social and Organic, by ARTHUR M. LEWIS. Charles H. Kerr & Company, Chicago, 1908. pp. 186.

The author begins with Thales and passes rapidly to Lamarck and then gives separate chapters upon Darwin, DeVries, Weismann, Haeckel and Spencer.

NOTES

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS

The next meeting of this Congress, which convenes in Washington, D. C., September, 1908, bids fair to be noteworthy. A large number of distinguished specialists from different countries are expected to be present. The proceedings of the Congress in four volumes will be free to all members. A large number of prizes will be awarded by Congress to special meritorious exhibits. The following group of awards more especially concerns Education.

PRIZES FOR EDUCATIONAL LEAFLETS

A prize of $100 is offered for the best educational leaflet submitted in each of the seven classes defined below. In addition to the prize

of $100, a gold medal and two silver medals will be awarded in each class. Each prize and medal will be accompanied by a diploma or certificate of award.

Competitors must be entered under assumed names.

A. For adults generally (not to exceed 1,000 words).

B. For teachers (not to exceed 2,000 words).

C. For mothers (not to exceed 1,000 words).

D. For in-door workers (not to exceed 1,000 words).

E. For dairy farmers (not to exceed 1,000 words).

F. For school children in grammar school grades (not to exceed 500 words).

In classes A, B, C, D, E and F, brevity of statement without sacrifice of clearness will be of weight in awarding. All leaflets entered must be printed in the form they are designed to take. Each exhibit must consist of one copy of the Leaflet mounted for exhibition and not less than ten additional copies (unmounted) for perusal by the Judges.

G. Pictorial booklet for school children in primary grades and for the nursery.

Class G is designed to produce an artistic picture book for children, extolling the value of fresh air, sunlight, cleanliness, etc., and showing contrasting conditions. "Slovenly Peter" has been suggested as a possible type. Entry may be made in the form of original designs without printing.

Each competitor in the contest for Prizes for Educational Leaflets shall mark his assumed name plainly on his entries. His real name shall be placed in a sealed envelope, which shall then be enclosed in a second envelope addressed to the Chairman of the Committee on Exhibition. W. H. B.

A letter from Mr. Emmanual Anastassoff, accompanied by a number of a Bulgarian Pedagogical Magazine, now in its fifth year, contains information of the growing interest in child study in Bulgaria, where the movement started about six years ago. The contents of the number of the "Pedagogical Library" just received, which have been translated into Bulgarian by Mr. Anastassoff, are "Child Study and its Relation to Education," by G. Stanley Hall; "Scope and Object of Child Study," by Prof. Muirhead; "Child Study and the Teachers," by Miss Mary Louch; and "Natural Method as the Archetype of all Methods," by E. Cook. A second number is devoted to a translation of "The Contents of Children's Minds on Entering School," by G. Stanley Hall, translated into Bulgarian by Em. Anastassoff. Mr. Anastassoff also announces the foundation of a new child study periodical to be printed in this country in the Bulgarian language.

T. L. S.

A distinguished Belgian lady, Madame Pecher, has devised a new method of utilizing dolls for educational purposes. She has many of them made representing personages in European history arranged in the order of time from the earliest dates. A child's interest in history is at first very largely personal, and these dolls being designed and dressed according to the latest results of the history of costumes and given traits and postures corresponding with their chief deeds, are said to work with the best results in the schools. G. S. H.